UCRL-CR-132816
B502975

Results of a Live-Trapping Survey for the Alameda Whipsnake (*Masticophis lateralis euryxanthus*) at the Site 300 Facilities of Lawrence Livermore National Laboratory

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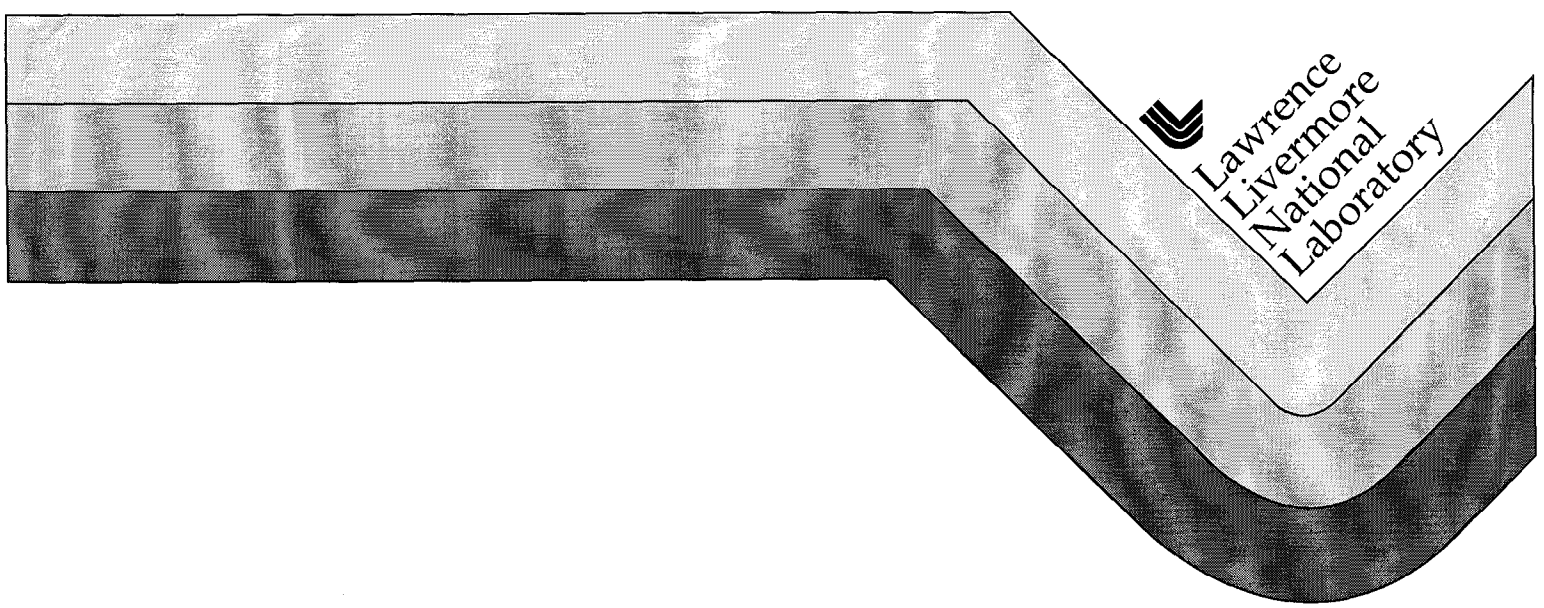
December 14, 1998



Work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract W-7405-ENG-48.

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December 14, 1998

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INTRODUCTION

The purpose of this report is to present the results of a live-trapping survey for the Alameda whipsnake (*Masticophis lateralis euryxanthus*) at the Site 300 Facilities of Lawrence Livermore National Laboratory (LLNL). The survey was conducted under the authority of the Federal recovery permit of Swaim Biological Consulting (PRT-815537) and a Memorandum of Understanding issued from the California Department of Fish and Game. The Alameda whipsnake is listed as a threatened species by both the State and Federal government.

Site 300 is located between Livermore and Tracy and straddles the Alameda and San Joaquin County line (Figure 1). The site is located just north of Tesla Road (Alameda County) and Corral Hollow Road (San Joaquin County). It encompasses portions of the USGS 7.5 minute Midway and Tracy quadrangles (Figure 2).

The Alameda whipsnake is one of two subspecies of the California whipsnake. The second subspecies, the chaparral whipsnake (*M. l. lateralis*) has no State or Federal protective status. Site 300 is geographically located in an area where the protected Alameda whipsnake and the chaparral whipsnake intergrade (Jennings 1983). Identification of museum specimens form the Corral Hollow area (all on Tesla Road-Alameda County) indicates presence of a single intergrade specimen and the four specimens of the non-protected subspecies (Jennings 1983, 1994). Jennings (1994) did not provide information regarding which subspecies the intergrade more closely resembled. The species range map in Stebbins (1985) indicates a peninsula of chaparral whipsnake in the extreme eastern edge of Alameda County and extreme western San Joaquin County. However, the classification in that area of the range was based on only a few museum specimens (Stebbins, pers. comm.).

Data gathered during previous environmental work at Site 300 has not been adequate to address the question of taxonomy (i.e. whether the Alameda whipsnake is present on the site). This is due in large part to a low number of individuals on which to base the decision, and also a lack of specifics regarding the identification of specimens found at the site. Three whipsnakes previously captured on the site, one in 1986 and two in 1991 were identified as more closely resembling the chaparral whipsnake based on photographs (McGinnis 1991). The whipsnake captured in 1986 was identified as intermediate between the two subspecies by Hansen (1986), who felt the specimen should be considered an Alameda whipsnake by virtue of its geographic location of capture (i.e. Hansen assumed the capture was within the range of the Alameda whipsnake). Neither Hansen (1986) or McGinnis (1991) provided details regarding the specific categorization of the eight characters described by Riemer (1954) and used to distinguish the chaparral whipsnake from the Alameda whipsnake.

The goals of this survey were to capture as many individual whipsnakes on the site as possible, to obtain descriptive and photographic documentation of each of the eight taxonomic characters used to distinguish the subspecies, and to make an identification of the subspecific classification of any California whipsnakes captured. The most effective way to reliably capture a large number of individuals, in a relatively short period of time, is to is to conduct a live-trapping survey in optimal whipsnake habitat, thus the need for this intensive trapping effort. Once this

information is gathered, a determination of whether the population or any individuals in the population more closely resemble the protected subspecies, the Alameda whipsnake, can be made.

ECOLOGY OF THE WHIPSNAKE

The Alameda whipsnake is a slender, fast moving, diurnal snake with a narrow neck and relatively broad head. The Alameda whipsnake reaches up to five feet in length. It is found primarily in chaparral, Diablan sage scrub, northern coyote brush scrub, and riparian scrub. Recent studies of Alameda whipsnakes equipped with radio transmitters have shown that they also utilize grassland and oak woodland/savanna adjacent to chaparral and scrub communities (Swaim 1994). The home ranges of six radio-equipped whipsnakes were centered on scrub communities. They ranged into the surrounding grassland for distances of greater than 500 feet (Swaim 1994). Whipsnakes remained in the grassland for periods ranging from a few hours to several weeks at a time (Swaim 1994). Grassland habitats were used by male whipsnakes most extensively during the mating season in spring (Swaim 1994). Female whipsnake used grassland areas most extensively after mating, possibly in their search for suitable egg-laying sites (Swaim 1994). The grassland habitat at Site 300 is of higher quality than grassland at many sites the principal investigator has surveyed, due to the presence of extensive rock outcroppings. All three of the California whipsnakes observed on the site during previous environmental work were in the grassland, over 500 feet from scrub (Figure 3). Rock outcrops provide cover and promote lizards, which are important prey for the Alameda whipsnake (Stebbins 1985, Swaim 1994). The rock outcrops in the grassland and/or the lack of cattle grazing at the site may also encourage more extensive use of some areas of the grassland, due to the persistent presence of cover.

MATERIALS AND METHODS

Study Area Description and Trapping Methods

Scrub habitat on the site was located using an existing vegetative cover map (U.S. Dept of Energy and the University of California 1994). All of the larger stands of scrub are located in the southwest portion of the site, near the Alameda and San Joaquin County Line (Figure 3). An estimated 100 acres of scrub is present in that area (U.S. Department of Energy and the University of California 1992.). Other small stands of scrub (<1 acre) are present in other areas of the site but were not mapped in previous environmental work or for this survey. Other habitats on the site include blue oak woodland, cismontane native grassland, riparian woodland, and disturbed areas. Rock outcrops are abundant throughout the site, but were not mapped.

Two trapping areas were chosen for the survey, both in San Joaquin County. One, the B855 trapping area, was located centrally in the largest stand of scrub on the site. This location was chosen because of the large amount of scrub, optimal habitat conditions (open canopy, rock outcrops, south-to east-facing aspect), its accessibility from a safety/security standpoint, and because it was near the Alameda County Line (Figure 3). The second trapping area was located in the riparian woodland/scrub in the west central portion of the site (Figure 3). This trapping area was chosen because observations of whipsnakes have been recorded from riparian woodland/scrub type habitat. Large rock outcrops were abundant in both trapping areas.

A total of 16 traplines were placed in the B855 trapping area (Figure 4). Fourteen of the traplines were 48 feet in length (traplines 1-12, 15 and 16) and two were 40 feet in length (traplines 13 and 14). Four traplines were placed in the riparian study area. Each was 48 feet in length. A trapline consisted of a length of drift fence with a double funneled trap at each end. All but two drift fences were constructed from 1/8th inch thick flexible hardboard. The base of a large rock outcrop functioned as a drift fence for two traplines in the riparian area (Figure 5). Each drift fence was a minimum of 14 inches high with approximately two inches of fence buried. Traplines were placed at various angles at the edge of the scrub and within openings of the scrub.

Traplines were set in the B855 area as follows: three traplines each on April 17 and 18, and two traplines each on April 20, 22, 25, 27, and 30. Due to weather and road conditions, trapline set-up in the riparian area was delayed until May 15 when two traplines were set with hardboard-type drift fences. Two traplines were set using the base of a rock outcrop as a drift fence on May 18. Traps were monitored daily or every other day, depending upon weather conditions. All vertebrate species captured in the traps were identified to species, with the exception of several individual mice which were identified to genus (*Peromyscus*). Each California whipsnake was measured, sexed, and marked by clipping a specific ventral scute. Additional data regarding taxonomy was collected for all California whipsnakes captured (see Taxonomic Data Collection section below).

Trap days were calculated for each trapping area. A trap-day equals a 48-foot trapline in the field for 24 hours. The 40-foot traplines were calculated as 0.8 trap days for every 24 hours of operation. Days were subtracted when lines were not active for whatever reason. Each of the two traplines in the riparian area with drift fences formed by rock outcrops were calculated as ½ trap day for every 24 hours of operation because animals could only gain access to the rock outcrop from one side. Line 14 was deactivated permanently on June 4, due to the persistent need for repairs from wind damage. Other lines were out of commission for only a few days and were accounted for when calculating the total number of trap days. A total of 1,152 trapdays were accomplished in the B855 area and 84 in the riparian area.

Taxonomic Data Collection

For each individual California whipsnake captured on the site, a categorization all eight of the taxonomic characters described by Riemer (1954) to distinguish the two subspecies was recorded. A description of each of the characters is provided in Table 1. A series of photographs of each individual was also taken to document the taxonomic characters.

Three additional California whipsnake were found dead on Tesla Road and collected by Wildlife Biologist Jim Woollett, Jr. of LLNL. All three snakes were found in an area between 1.5 and three miles due west of the Site 300 Boundary. A categorization of all eight of the taxonomic characters described by Riemer (1954) to distinguish the two subspecies was recorded and a series of photographs of each individual was also taken to document the taxonomic characters.

Table 1. Summary of taxonomic characters used to distinguish between the subspecies of the California whipsnake as described in Riemer (1954)

CHARACTER	Description of Character in:	
	M. l. lateralis	*M. l. euryxanthus*
1. Dorsolateral stripe width	usually two half-scale rows, occasionally wider in other parts of the range but margins are not distinct or stripe is irregular	one and two half-scale rows or two full scale rows
2. Spotting on ventral surfaces of head and neck	black spotting present	virtual lack of spotting on ventral surface of head and neck (pair of small indistinct black spots present on the mental and one spot present on each of first four infralabials on each side).
3. Light line between eye and nostril	light stripe between eye and nostril interrupted by dark vertical lines along the margins of the loreal	light stripe between eye and nostril usually not interrupted by dark vertical lines along the margins of the loreal
4. Horizontal rostral line	dark line (continuation of dark ventral border of light stripe between eye and nostril) present across rostral	lack, usually, of dark line across rostral (continuation of dark ventral border of light stripe between eye and nostril)
5. Anterior communication of light strip and venter	direct communication anteriorly between lateral light strip and light venter rare or absent	direct communication anteriorly between lateral light stripe and light venter
6. Dorsal color on ventrals	dorsal color retained on the ventrals from one and one half to four times (usually two to two and one-half times) the snout-parietal distance back from the snout	absence of dorsal color on the ventrals for a distance back from the snout equal to four and one-half to six times the distance from the snout to the posterior edge of the parietals
7. Dorsal color	olive, olive brown, blackish-olive or dark brown	sooty black
8. Stripe color/amount and distribution of orange-rufous color	anterior ventral surfaces are pale yellow or pale orange and stripes are light cream or pale yellow.	heavy suffusion of orange-rufous color present on the anterior light portions of the body.

RESULTS

B855 Trapping Area

A total of 25 captures of 14 individual *M. lateralis* were made in funnel traps in the B855 trapping area (Table 2). Whipsnakes were captured in 10 of the 16 traplines in the B855 area and were the most frequently captured snake species during the survey (Tables 3 and 4). One individual (L2) was captured five times in four different traplines. One individual (R2) was captured four times in four different traplines. Four individuals (L1, R8R9, R3, L4) were captured twice, each recaptured in different traplines than the original capture. Eight individuals were captured a single time. An additional 20 vertebrate species were also captured in the traplines (Tables 3 and 4). These included four lizard species, eight snake species and eight small mammal species. One of these species, the San Joaquin coachwhip (*Masticophis flagellum ruddocki*) is designated as California Species of Special Concern.

Riparian Area (E of B812)

No *M. lateralis* were captured in this trapping area. However, the number of traplines and the timing and duration of trapping were not sufficient to justify a negative finding for the snake in this area. The riparian trapping area provides potential habitat based on the presence of a few acres of scrub in association with rock outcrops. The habitat may not be optimal due to the relatively small amount of scrub present and the large distance to other patches of scrub. Table 5 provides a summary of the records of vertebrate species captured in this trapping area.

Taxonomy

All 14 of the *M. lateralis* captured on the site and the three found on Tesla Road are intergrades between the two subspecies. For each individual *M. lateralis*, Table 6 summarizes the preliminary categorization of each of the eight taxonomic characters as representative of *M.l.lateralis*, *M.l. euryxanthus*, or intermediate between the two subspecies (intergrades). Photographic documentation is on file with Mr. Jim Woollett, LLNL Wildlife Biologist and the principal investigator, at Swaim Biological Consulting.

Several individuals more closely resemble the non-protected subspecies, *M. l. lateralis* (Table 6). The individual which most resembles the Alameda whipsnake is R5, captured on Site 300. Three of the eight characters are positively categorized as representing the Alameda whipsnake. These include stripe width, light stripe between eye and nostril not interrupted by dark vertical lines along the margins of the loreal, and direct communication anteriorly between lateral light stripe and light venter. Three additional characters were preliminarily categorized as intermediate between the two subspecies, including very minimal spotting under the chin, an incomplete horizontal rostral stripe, and an appearance of a dorsal color of black with only a slight olive hue on the head of the snake.

Table 2. Data summary for 25 captures of 14 individual *Masticophis lateralis* at LLNL Site 300.

Mark	Date(s) of capture (1998)	Trapline	Sex	Length (cm) Snout-vent/ Total Length	Weight (grams)
R1	April 22	8a	Male	73/105	102
L1	April 27	10b	Female	80/103.5	112
	May 25	15b			
R2	April 27	2a	Male	86/119	131
	May 2	7b			
	May 20	11a			
	May 31	6a			
R8R9	April 29	11a	Female	91.5/127	200
	July 8	15b		94/130	
L2	May 2	9b	Male	78/112	100
	May 15	11a			
	May 17	11b			
	June 22	5a			
	June 29	5b			
R3	May 10	11a	Male		138
	May 20	8b			
L3	May 15	9a	Male	80/113	
L4	May 17	11b	Male	79/112	104
	May 20	9b			
R4	May 18	10a	Female	72/102	82
R5	May 20	8b	Male	70/106	82
L5	June 8	10b	Female	93/128	245
R6	June 12	4a	Female	46/62	30
L6	June 27	4a	Male	86/114	160
R7	June 27	9b	Female	65/94.5	

Table 3. Summary of vertebrate species captured in traplines 1-9 in the B855 trapping area from April 17 through July 8, 1998 at LLNL Site 300.

Species Captured	Trapline Number								
	1	2	3	4	5	6	7	8	9
California whipsnake (*Masticophis lateralis*)	**0**	**1**	**0**	**2**	**2**	**1**	**1**	**3**	**5**
Western fence lizard (*Sceloporus occidentalis*)	0	0	0	0	0	0	0	0	0
Side-blotched lizard (*Uta stansburiana*)	0	1	2	3	2	0	0	0	0
Gilbert skink (*Eumeces gilberti*)	0	2	5	2	1	8	3	2	4
Western whiptail (*Cnemidophorus tigris*)	1	0	1	0	4	0	1	0	0
Southern alligator lizard (*Gerrhonotus multicarinatus*)	0	0	0	1	0	2	0	1	0
Racer (*Coluber constrictor*)	2	0	1	0	1	1	0	0	0
San Joaquin coachwhip (*Masticophis flagellum ruddocki*)	2	2	4	0	1	2	0	1	1
Glossy snake (*Arizona elegans*)	0	0	0	0	0	1	1	0	1
Gopher snake (*Pituophis melanoleucus*)	3	1	3	0	3	2	0	1	3
Common kingsnake (*Lampropeltus getulus*)	3	3	3	2	2	1	0	0	0
Long-nosed snake (*Rhinocheilus lecontei*)	2	4	6	0	3	1	0	0	2
Night snake (*Hypsiglena torquata*)	0	0	1	0	0	1	0	0	2
Western rattlesnake (*Crotalus viridis*)	1	0	0	0	0	0	0	0	1
Deer mouse (*Peromyscus maniculatus*)	6	4	3	5	5	1	1	2	1
Pinyon mouse (*Peromyscus truei*)	0	1	3	0	1	0	0	0	0
Peromyscus spp.	0	0	3	1	0	0	0	0	0
Western harvest mouse(*Reithrodontomys megalotis*)	8	12	7	10	8	8	0	0	2
California meadow vole (*Microtus californicus*)	2	10	4	5	3	5	2	2	3
House mouse (*Mus musculus*)	1	4	0	0	0	2	0	1	1
Botta's pocket gopher (*Thomomys botta*)	0	0	0	1	0	0	0	0	0
Shrew (*Sorex* spp.)	0	1	0	0	0	1	0	1	1

Table 4. Vertebrate species captured in traplines 10- 16 in the B855 trapping area April 17 through July 8, 1998, at LLNL Site 300.

Species Captured	Trapline Number							TOTAL (1-16)
	10	11	12	13	14	15	16	captures/individuals
California whipsnake (*Masticophis lateralis*)	**3**	**5**	**0**	**0**	**0**	**2**	**0**	**25**
Western fence lizard (*Sceloporus occidentalis*)	0	0	0	0	0	0	0	0
Side-blotched lizard (*Uta stansburiana*)	1	1	2	0	0	1	1	14
Gilbert skink (*Eumeces gilberti*)	2	2	0	1	1	1	0	34
Western whiptail (*Cnemidophorus tigris*)	0	5	1	0	0	2	0	15
Southern alligator lizard (*Gerrhonotus multicarinatus*)	1	2	0	0	0	0	1	8
Racer (*Coluber constrictor*)	0	0	0	0	1	1	0	7
San Joaquin coachwhip (*Masticophis flagellum ruddocki*)	0	0	2	0	0	1	1	17
Glossy snake (*Arizona elegans*)	0	0	0	1	0	0	0	4
Gopher snake (*Pituophis melanoleucus*)	2	0	1	0	0	1	0	20
Common kingsnake (*Lampropeltus getulus*)	2	1	2	0	0	3	0	21
Long-nosed snake (*Rhinocheilus lecontei*)	0	1	1	0	0	2	0	22
Night snake (*Hypsiglena torquata*)	0	1	0	0	0	1	0	6
Western rattlesnake (*Crotalus viridis*)	0	0	0	0	0	1	0	3
Deer mouse (*Peromyscus maniculatus*)	6	2	2	2	2	4	13	59
Pinyon mouse (*Peromyscus truei*)	1	0	1	1	0	1	0	9
Peromyscus spp.	1	0	0	0	0	3	0	8
Western harvest mouse(*Reithrodontomys megalotis*)	5	8	7	2	4	6	10	97
California meadow vole (*Microtus californicus*)	3	2	4	1	1	5	3	55
House mouse (*Mus musculus*)	1	0	0	1	0	0	0	11
Botta's pocket gopher (*Thomomys botta*)	0	0	0	0	0	0	0	1
Shrew (*Sorex* spp.)	0	0	0	1	0	0	1	6

Table 5. Vertebrate species capture in the riparian trapping area May 15 through June 27, 1998 at LLNL Site 300.

	Trapline Number			
Species Captured	**17**	**18**	**19**	**TOTAL (17-19)**
Pacific chorus frog (*Pseudacris regilla*)	3	0	0	3
Western fence lizard (*Sceloporus occidentalis*)	5	0	0	5
Side-blotched lizard (*Uta stansburiana*)	2	4	3	9
Gilbert skink (*Eumeces gilberti*)	15	3	1	19
Western whiptail (*Cnemidophorus tigris*)	2	6	0	8
Southern alligator lizard (*Gerrhonotus multicarinatus*)	1	1	0	2
Gopher snake (*Pituophis melanoleucus*)	1	1	0	2
Common kingsnake (*Lampropeltus getulus*)	3	0	0	3
Long-nosed snake (*Rhinocheilus lecontei*)	2	1	0	3
Night snake (*Hypsiglena torquata*)	2	0	0	2
Western rattlesnake (*Crotalus viridis*)	1	0	0	1
Peromyscus spp.	1	3	0	4
Western harvest mouse(*Reithrodontomys megalotis*)	2	4	1	7
California meadow vole (*Microtus californicus*)	0	2	0	2
Shrew (*Sorex* spp.)	2	0	0	2

Table 5. Preliminary categorization of the eight taxonomic characters of 14 M. lateralis captured on the site and three found dead on Tesla Road, Alameda County. **(SUBJECT TO REVISION)**

Whipsnake (mark)	Characters							
	1. Stripe width	2. Chin spotting	3. Nostril-eye stripe	4. Rostral stripe	5. Stripe/ ventral communication	6. Dorsal color on ventrals	7. Dorsal color	8. Orange coloration
On-site specimens								
R1	*M.l.l.*	*M.l.l.*	x	x	*M.l.e.*	*M. l. l.*	x	*M.l.l.*
L1	*M.l.l.*	*M.l.l.*	x	x	x	*M. l. l.*	x	*M l l.*
R2	*M.l.l.*	*M.l.l.*	*M.l.l.*	x	x	*M.l.l.*	x	*M.l.l.*
L2	*M.l.l.*	*M.l.l.*	*M.l.l.*	x	*M.l.e.*	*M.l.l.*	x	*M.l.l.*
R3	*M.l.l.*	*M.l.l.*	*M.l.e.*	x	*M.l.e.*	*M.l.l.*	x	*M.l.l.*
L3	*M.l.l.*	*M.l.l.*	*M.l.l.*	*M.l.l.*	x	*M.l.l.*	x	*M.l.l.*
R4	*M.l.l.*	*M.l.l.*	*M.l.l.*	*M.l.l.*	x	*M.l.l.*	x	*M.l.l.*
L4	*M.l.l.*	*M.l.l.*	x	x	x	*M.l.l.*	x	*M.l.l.*
R5	***M.l.e.***	**x**	***M.l.e.***	**x**	***M.l.e.***	***M.l.l.***	**x**	*M.l.l.*
L5	*M.l.l.*	*M.l.l.*	*M.l.l.*	*M.l.l.*	*M.l.e.*	*M.l.l.*	x	*M.l.l.*
R6	*M.l.l.*	*M.l.l.*	*M.l.e.*	*M.l.l.*	*M.l.e.*	*M.l.l.*	*M.l.l.*	*M.l.l.*
L6	*M.l.l.*	*M.l.l.*	x	x	*M.l.l.*	*M.l.l.*	x	*M.l.l.*
R7	*M.l.l.*	*M.l.l.*	*M.l.e.*	*M.l.l.*	*M.l.e.*	*M.l.l.*	*M.l.l.*	*M.l.l.*
R8R9	*M.l.l.*	*M.l.l.*	*M.l.l.*	*M.l.l.*	*M.l.e.*	*M.l.l.*	*M.l.l.*	*M.l.l.*
Off-site Specimens (Tesla Road, Alameda County)								
1	*M.l.l.*	*M.l.l.*	*M.l.e.*	*M.l.l.*	*M.l.e.*	*M.l.l.*	*M.l.l.*	*M.l.l.*
2	*M.l.l.*	*M.l.l.*	*M.l.l.*	*M.l.l.*	*M.l.e.*	*M.l.l.*	*M.l.l.*	*M.l.l.*
3	*M.l.l.*	x	*M.l.l.*	*M.l.l.*	*M.l.e.*	*M.l.l.*	*M.l.l.*	*M.l.l.*

LEGEND:

M.l.l. =*Masticophis lateralis lateralis*
M.l.e. = *Masticophis lateralis euryxanthus*
x = character intermediate between *M.l.l.* and *M.l.e.*

DISCUSSION

A relatively large number of individual California whipsnakes (14) were captured on the site during this survey. This survey has resulted in the highest number of trap captures (25) and the second highest number of captures per trap day of any of the other twelve surveys the author has conducted or participated in where California whipsnakes were captured. These include a survey conducted April through November for two consecutive years, one survey conducted April through November, nine surveys conducted for approximately 90 spring days, and one survey conducted for 41 spring days.

For each individual California whipsnake captured, a preliminary categorization of each of the eight taxonomic characters has been made and a photographic data base exists for a more definitive examination of taxonomy at the site. The preliminary categorization indicates that at least one individual (R5) in the population may more closely resemble the threatened Alameda whipsnake. R5 has three of eight characters which are positively representative of the Alameda whipsnake and three which appear to be intermediate between the two subspecies. However, several of these taxonomic characters are problematic. This is due in part to the lack of information regarding the range in variation of the characters in Riemer (1954), the original description of the subspecies, which was based on only six specimens. Riemer (1954) alone does not provide enough description of variation found to provide absolute answers regarding how some characters should be assigned. For example, the horizontal rostral stripe is present, but broken in snake R5. This has been interpreted that as being intermediate in character, by the author, because it does not match either subspecies as described by Riemer (1954). It is possible that the variation described above is just a variation found in the non-protected subspecies. The third problem with this character (and one other) is that Riemer (1954) indicated that the rostral stripe is usually absent in the Alameda whipsnake. Review of museum specimens (e.g. Museum of Vertebrate Zoology and the California Academy of Sciences) and consultation with someone with more expertise in taxonomic characters of both subspecies and intergrades is critical to resolving these issues.

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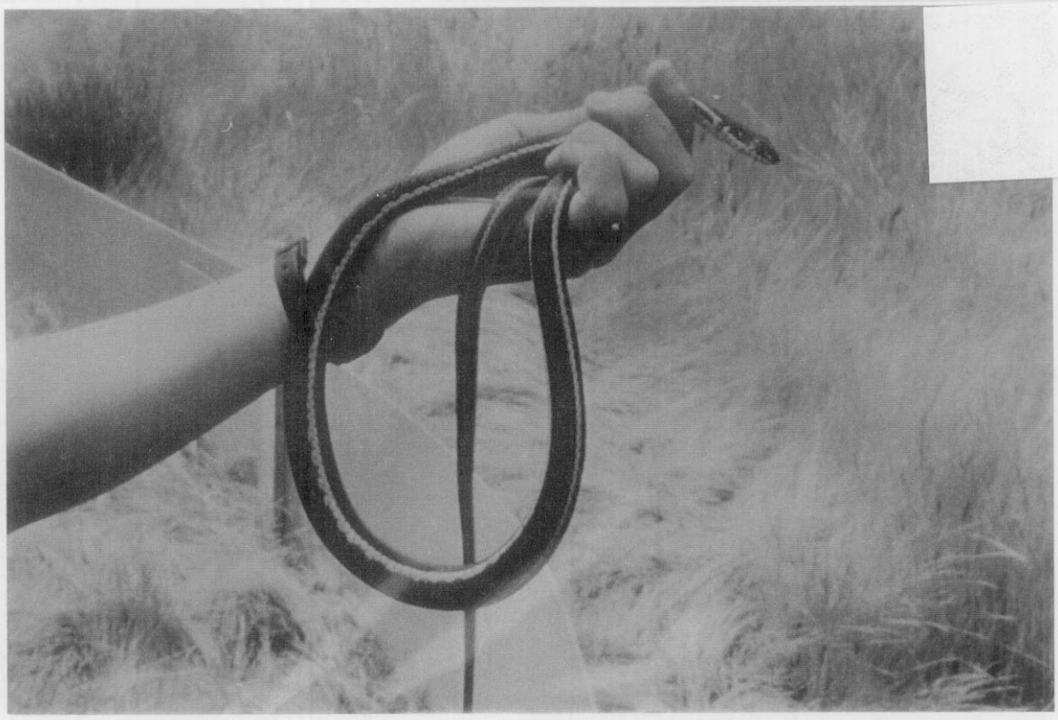
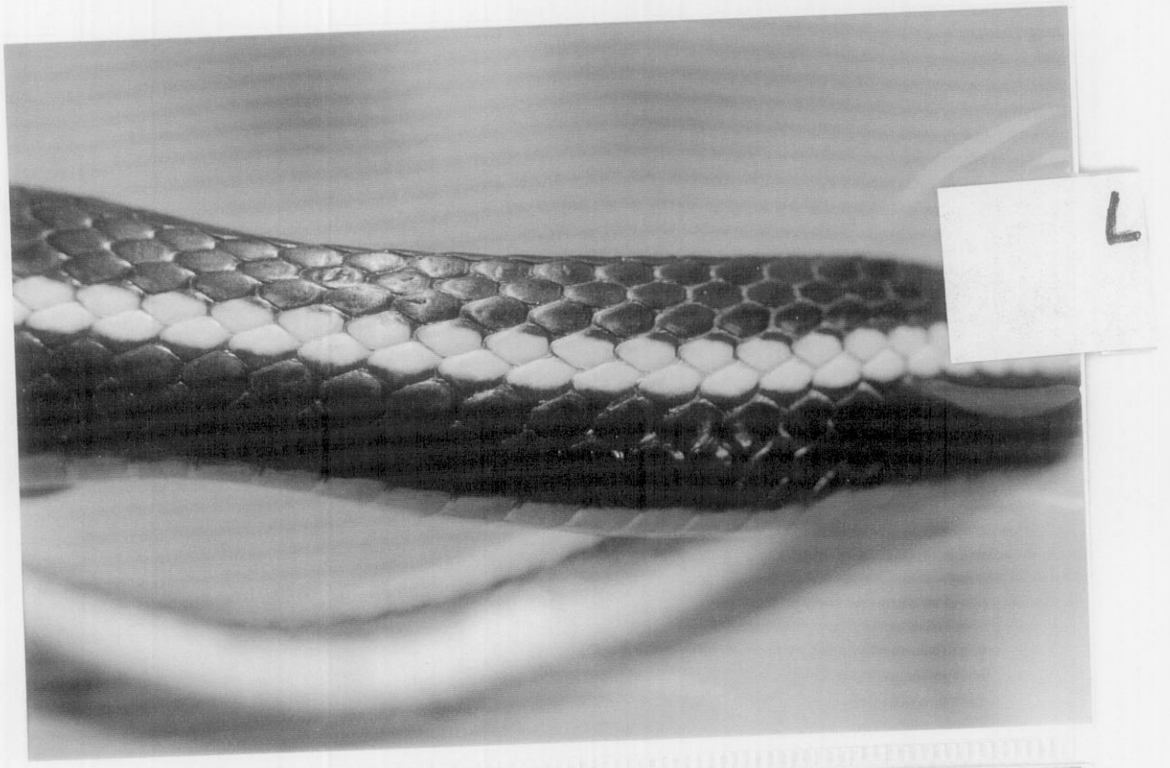
PERSONAL COMMUNICATIONS

Stebbins, R. C., Professor Emeritus University of California, Berkeley. June 30, 1998.

McGinnis, S. M., Professor, California State University, Hayward. August 11, 1998 and 1991 (no date) phone record of Pam Garcia, Biosystems Analysis.


R1

R1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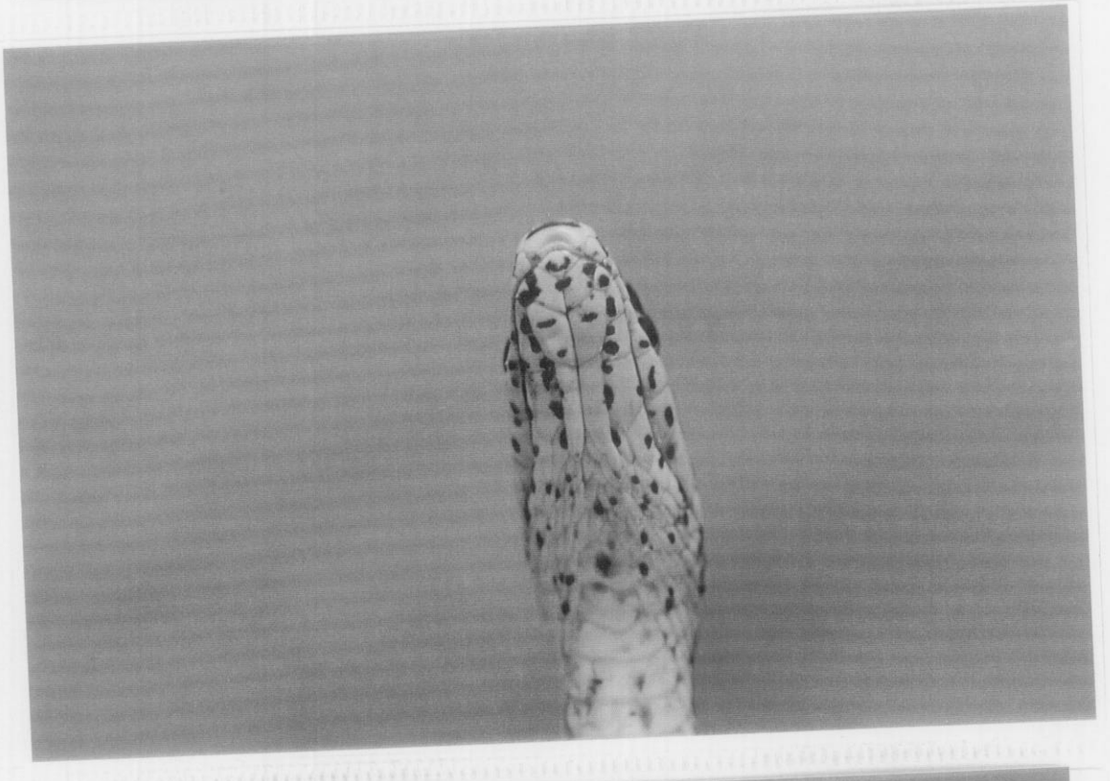

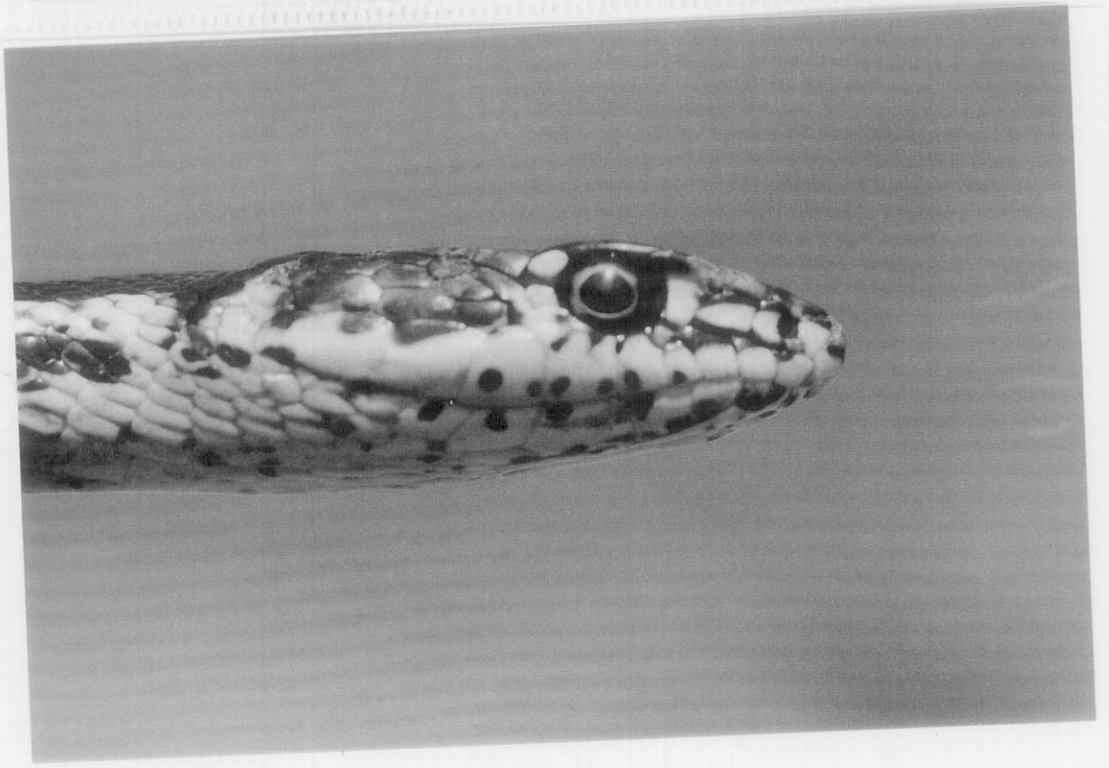

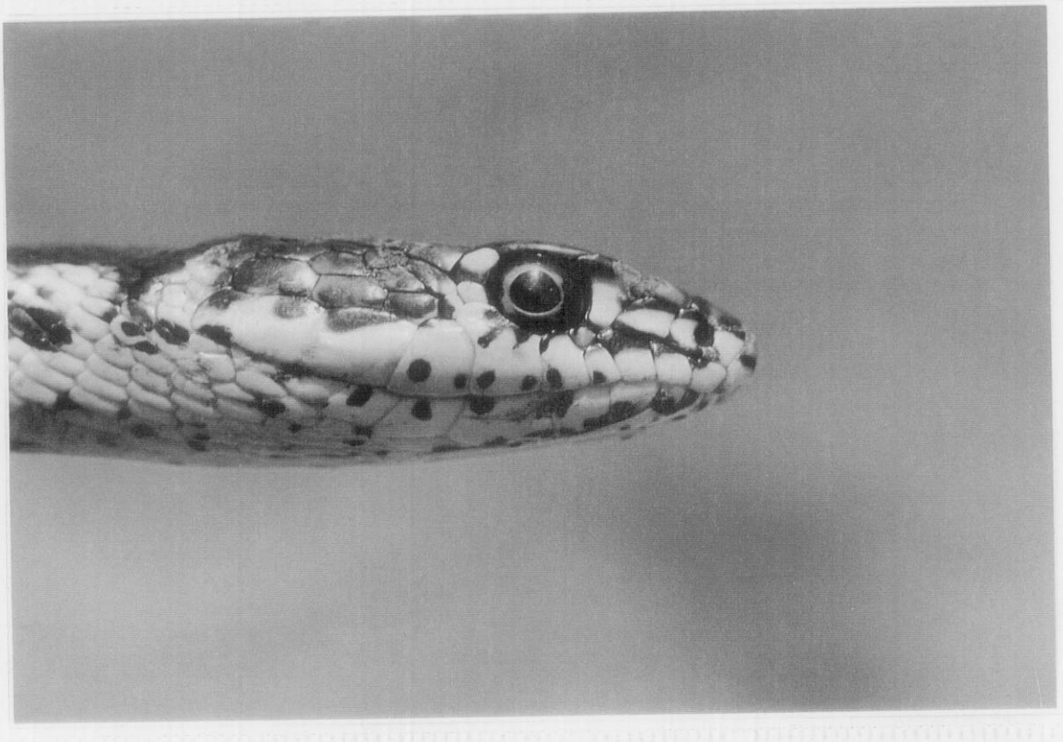


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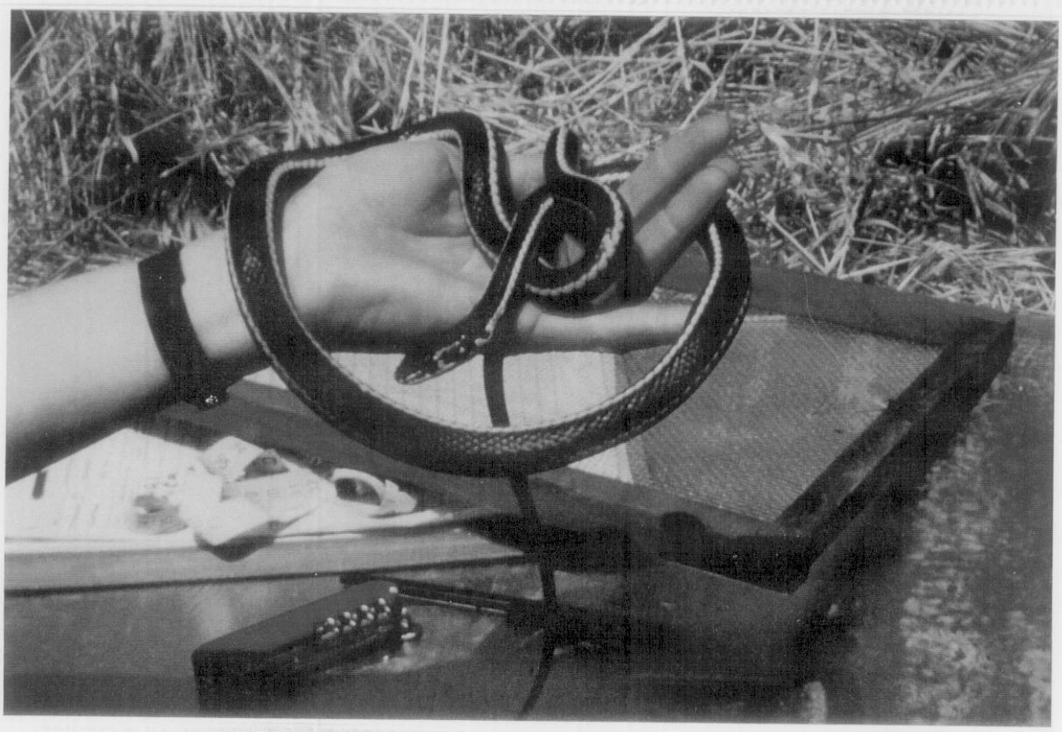

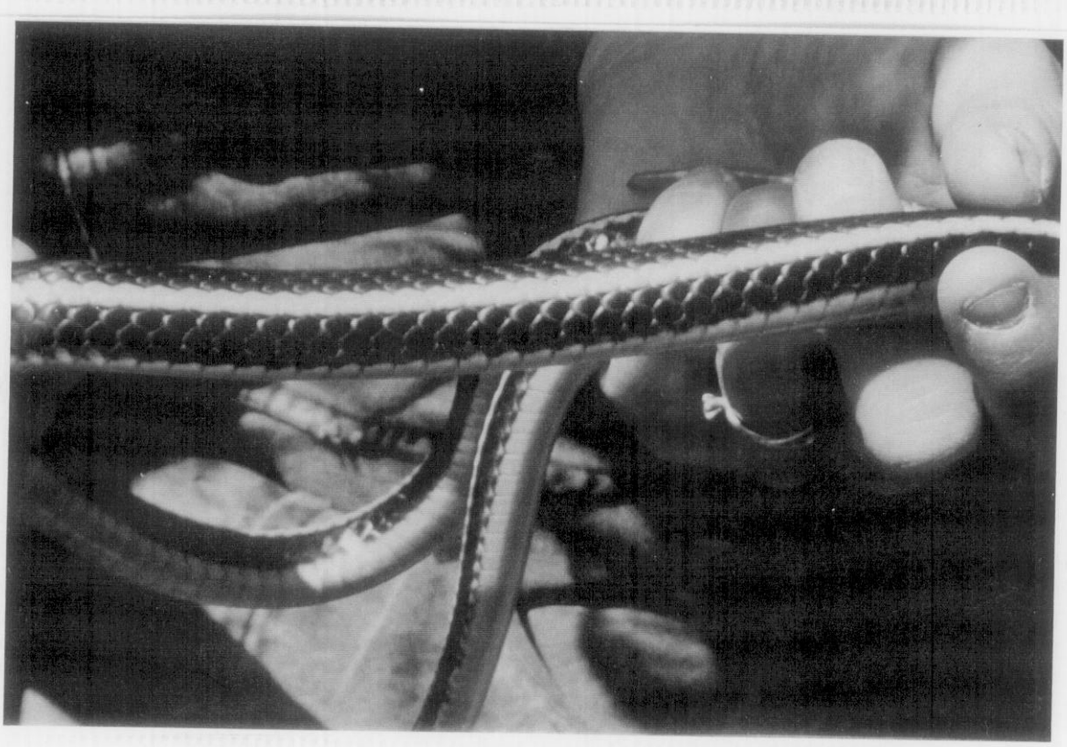

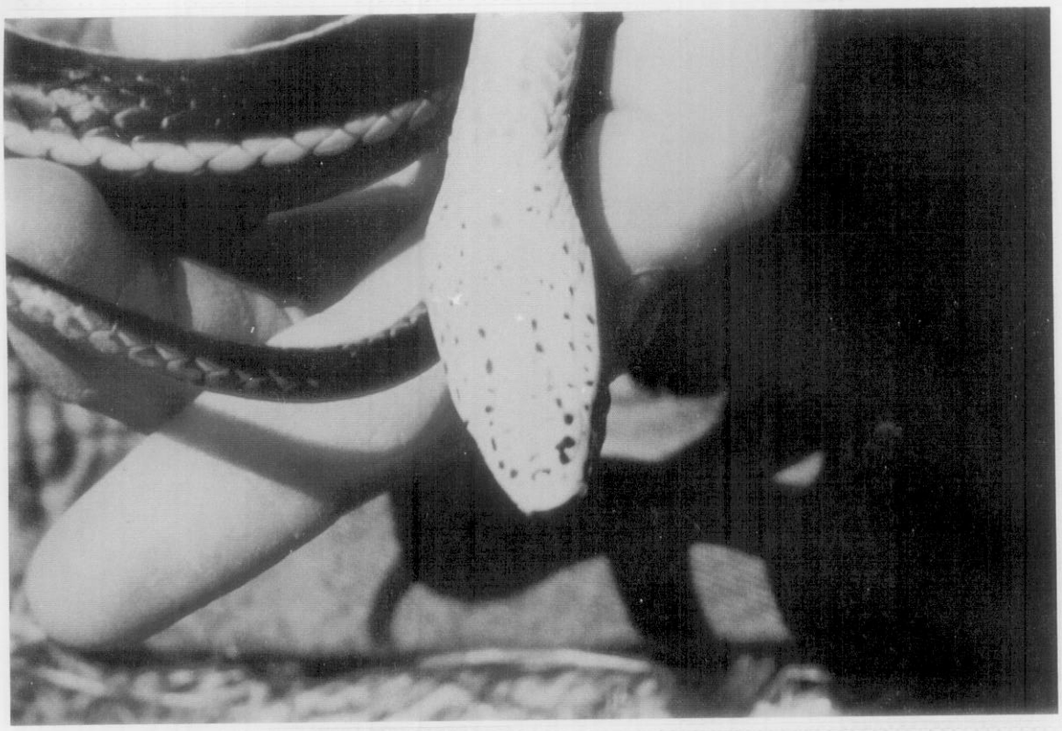

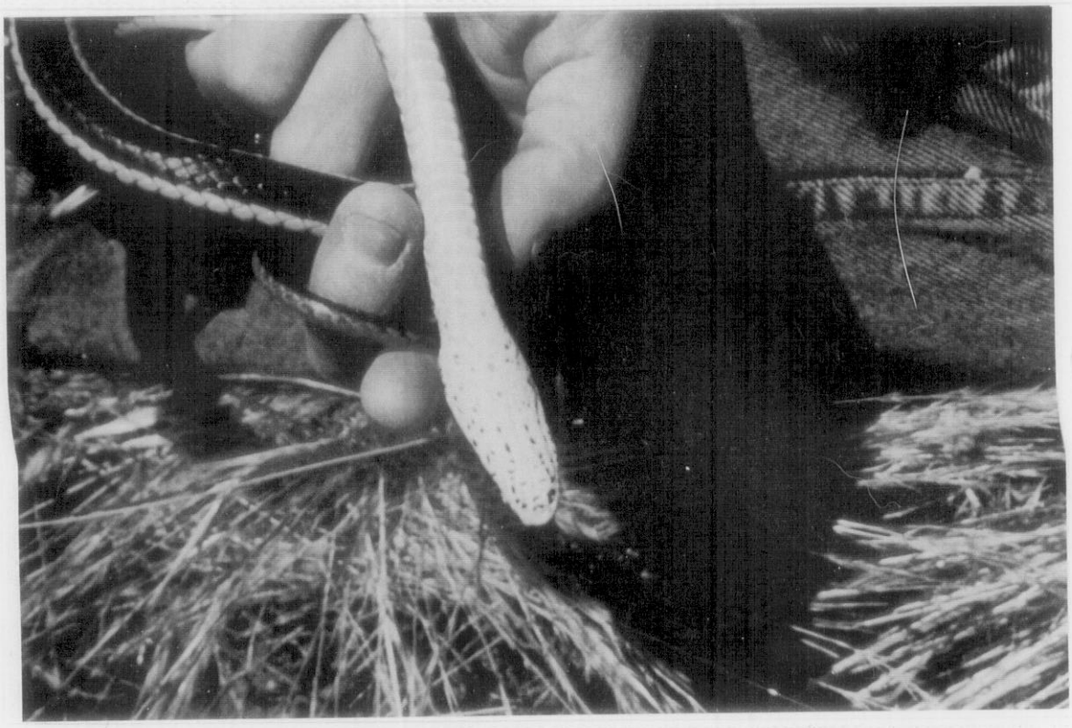

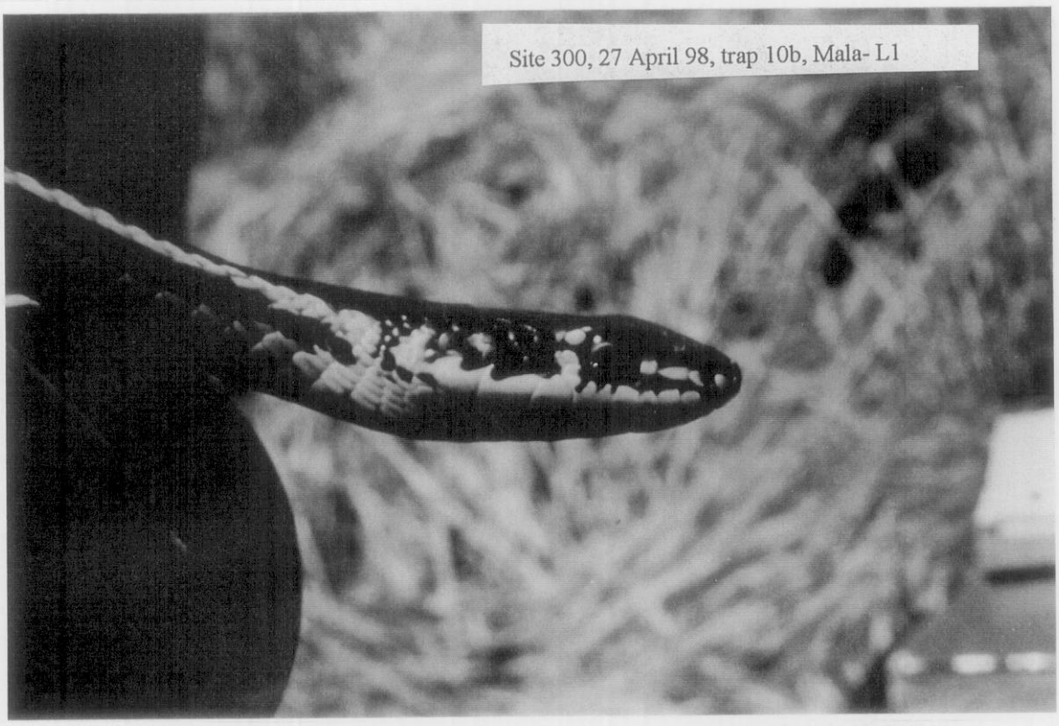
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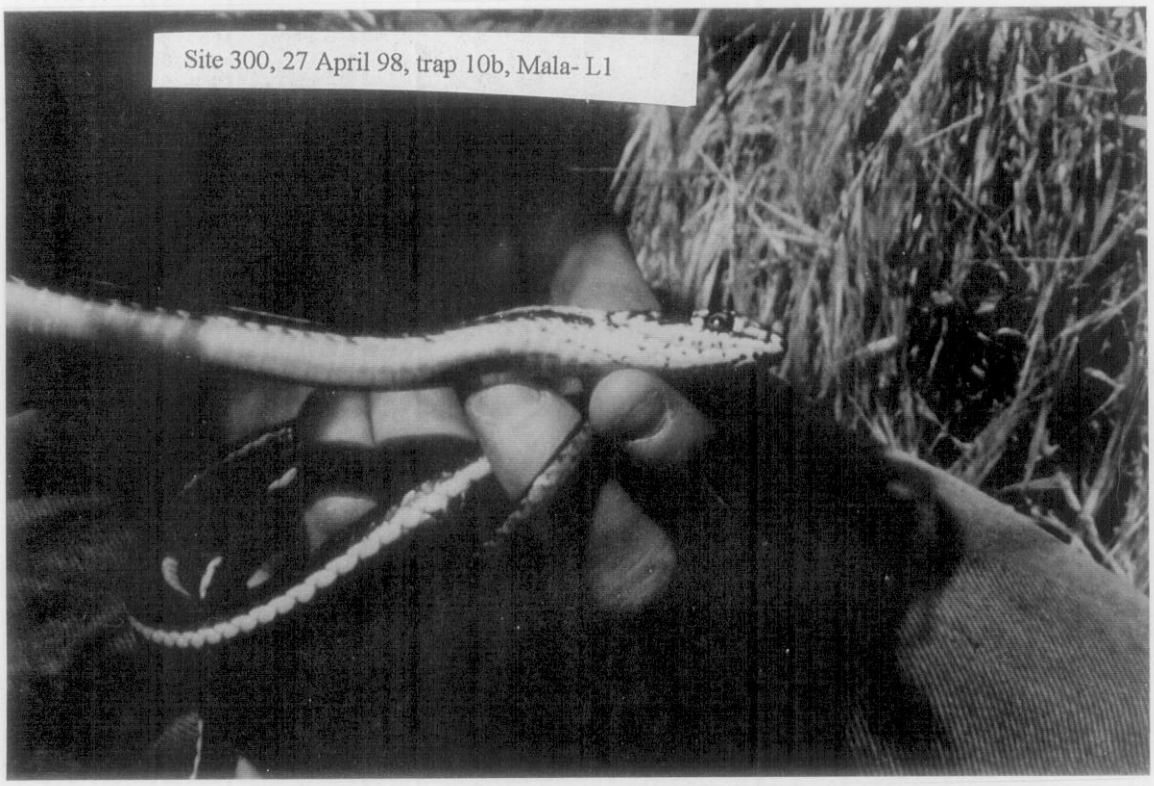
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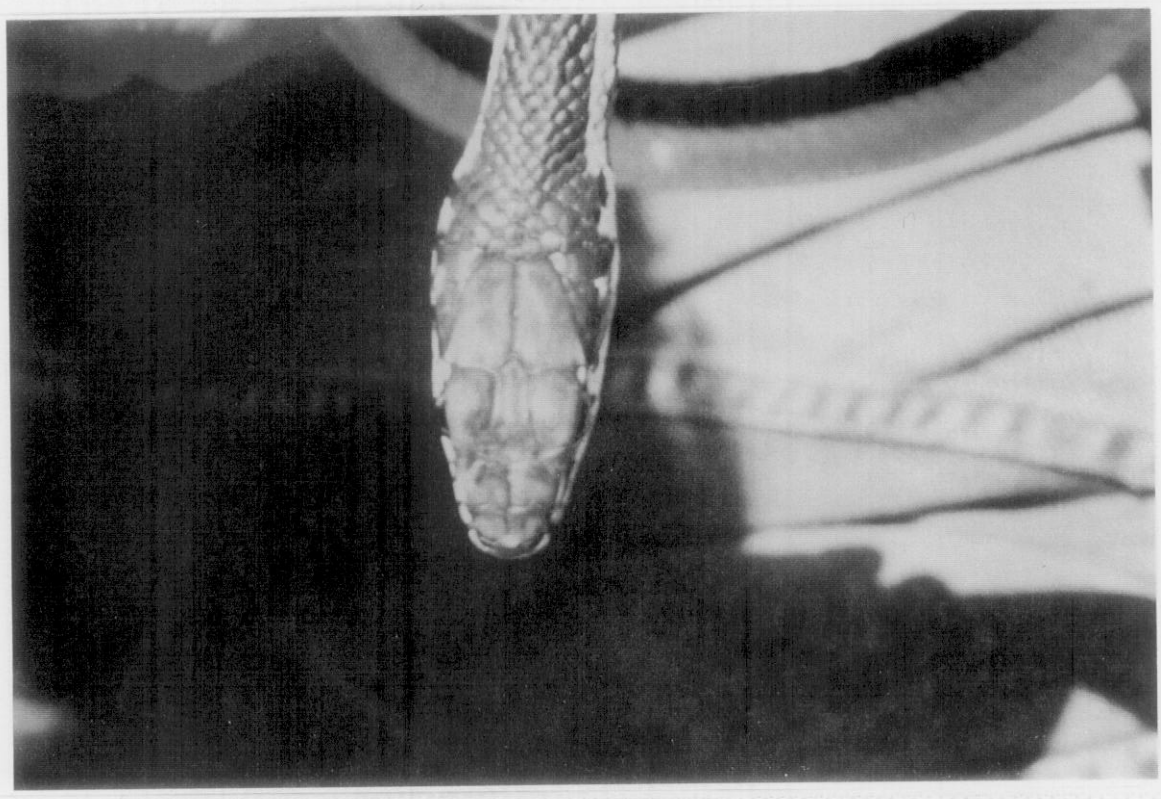


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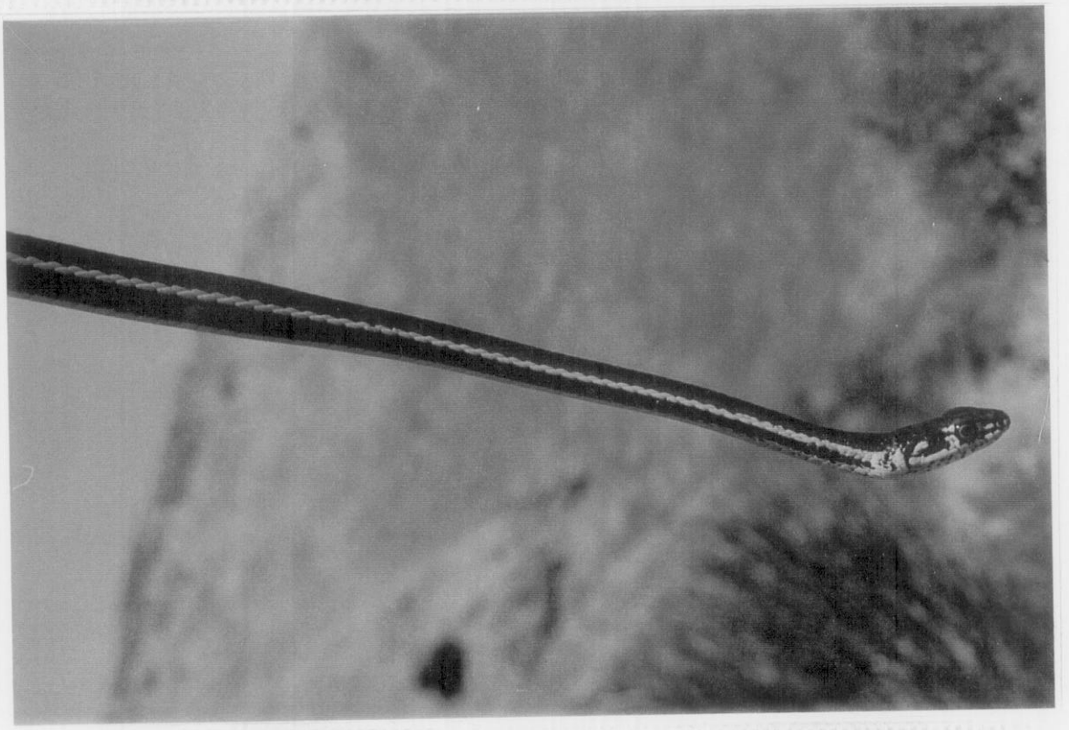

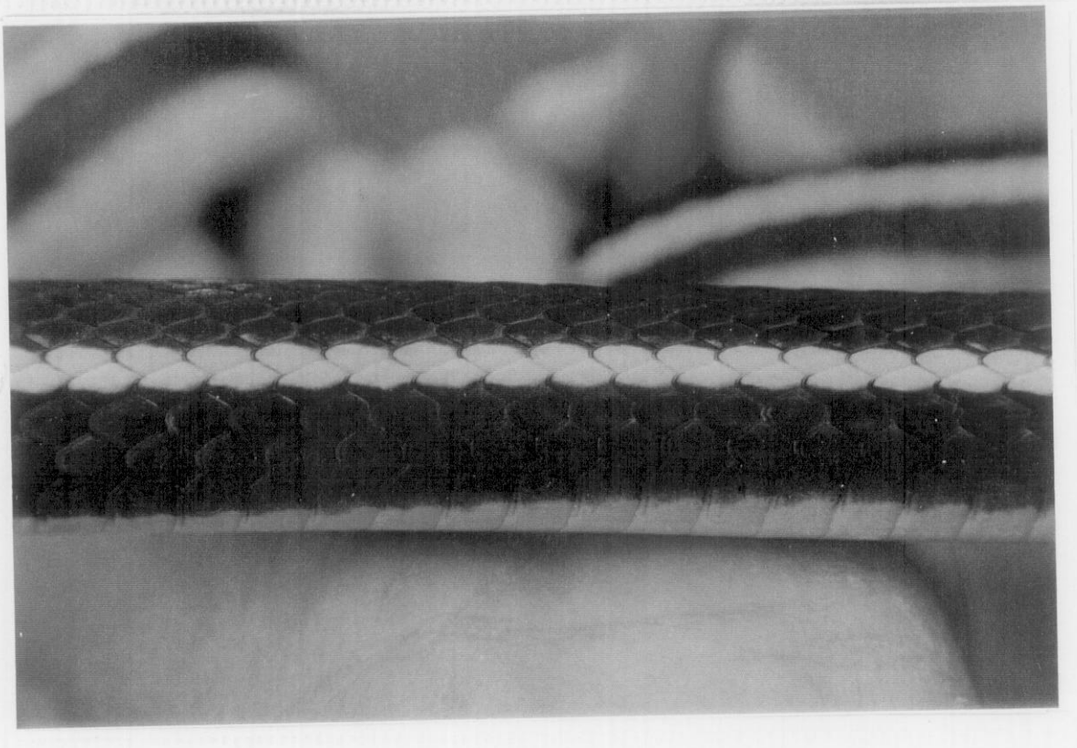

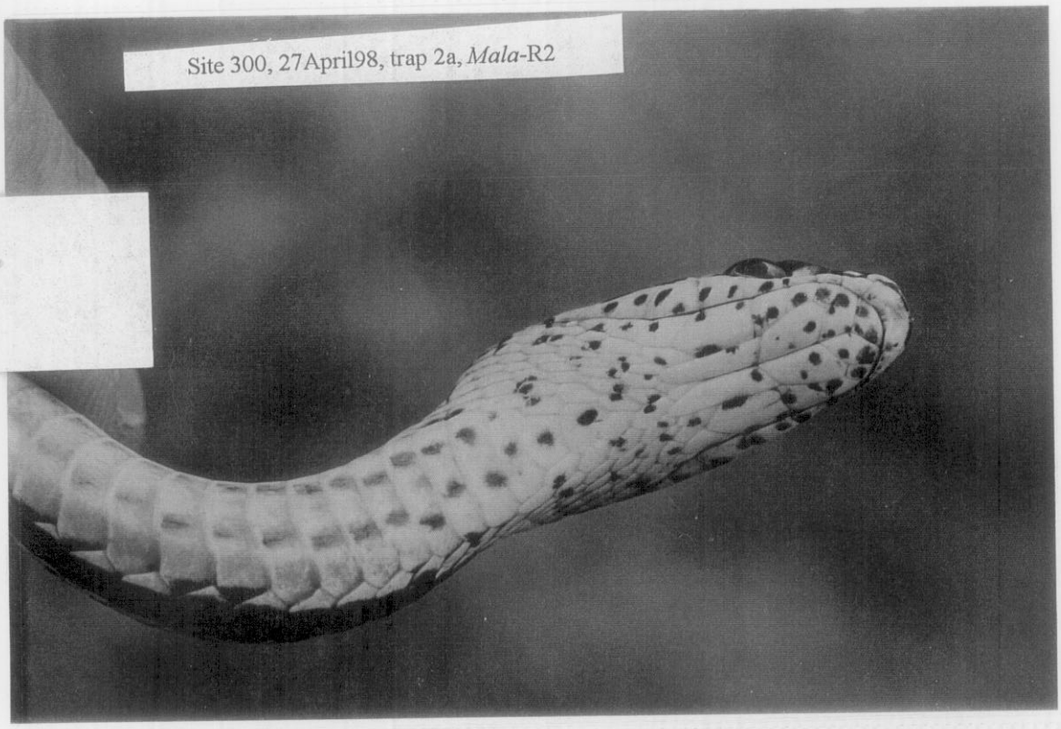
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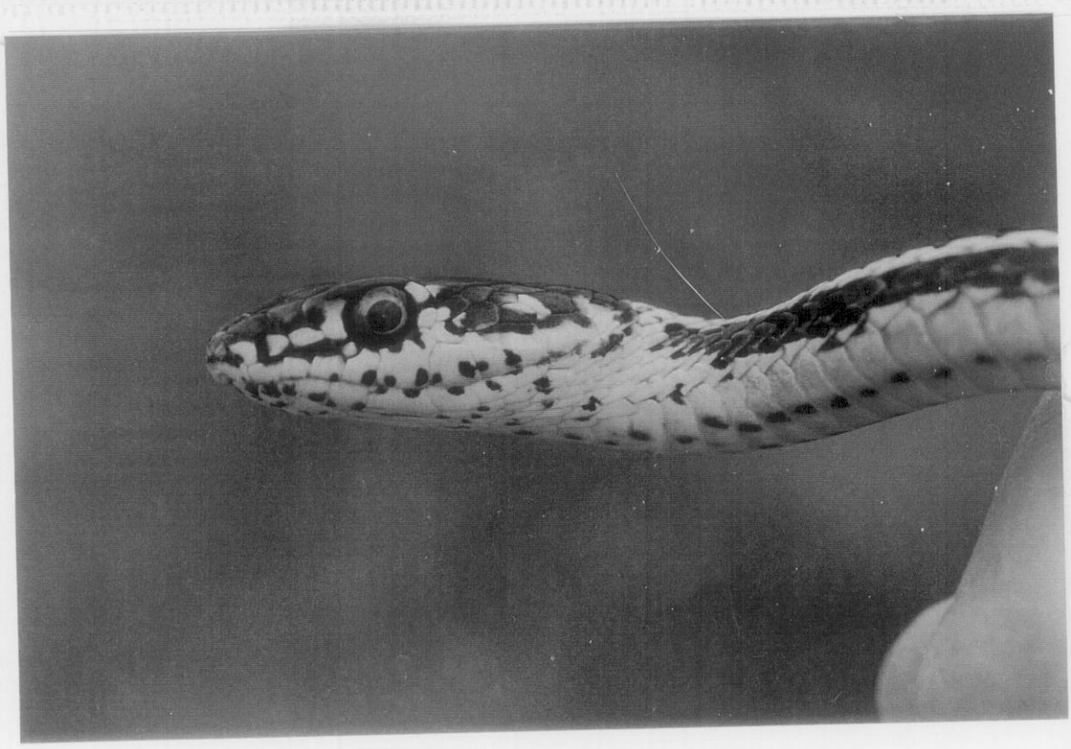

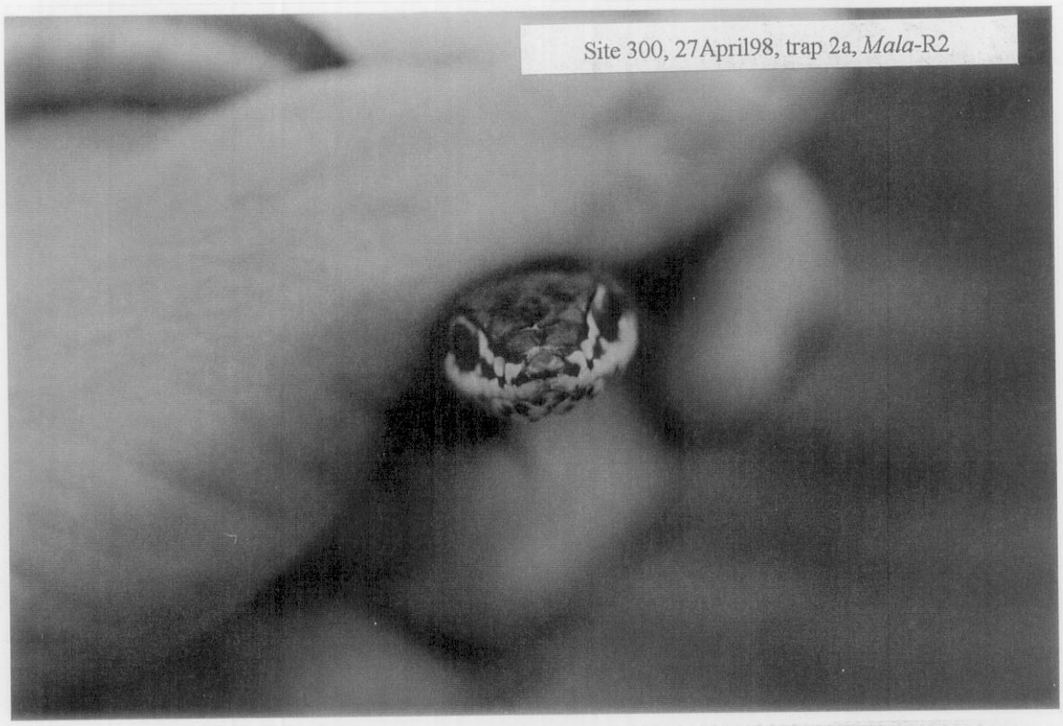
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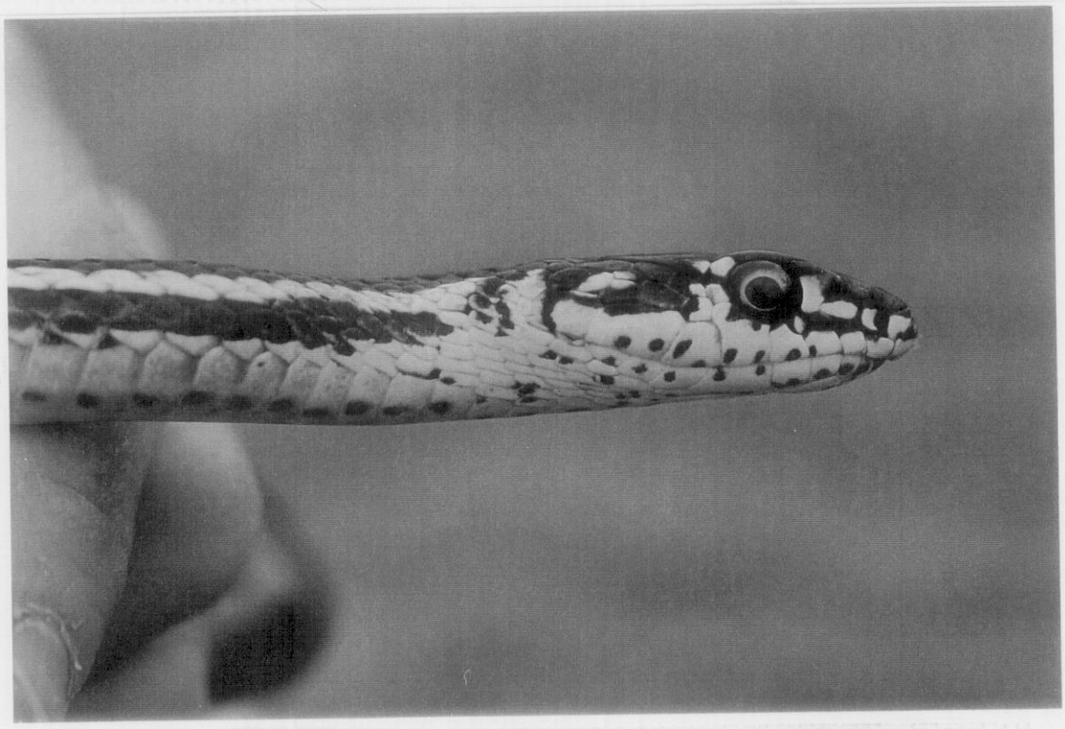


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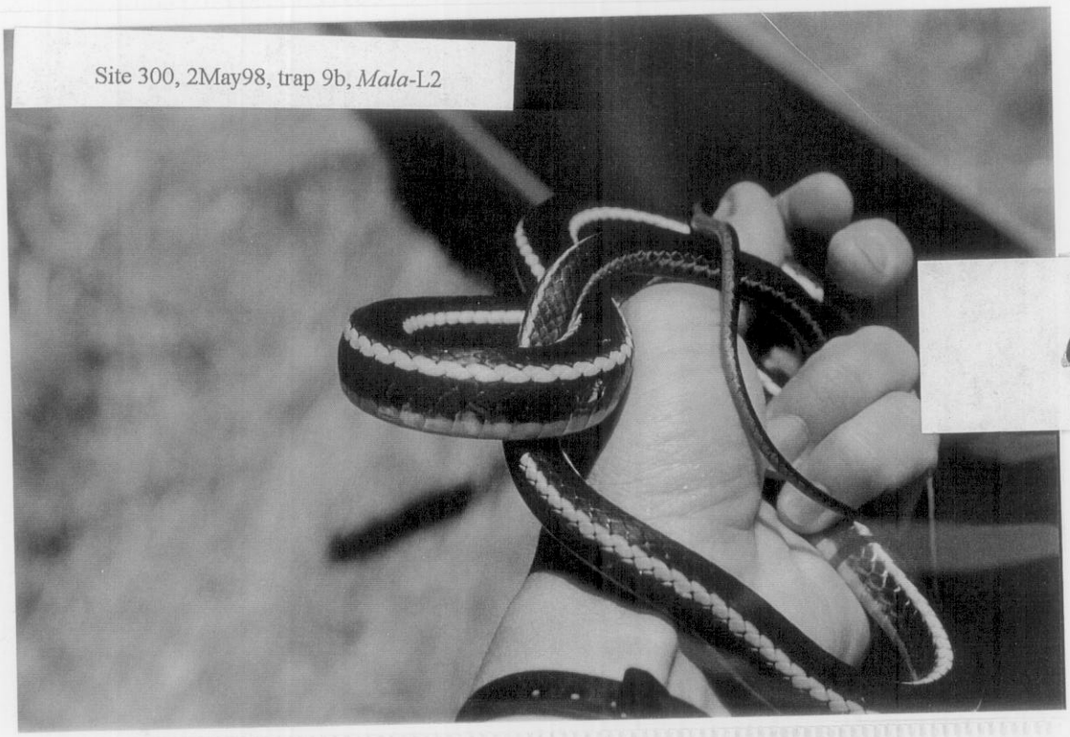
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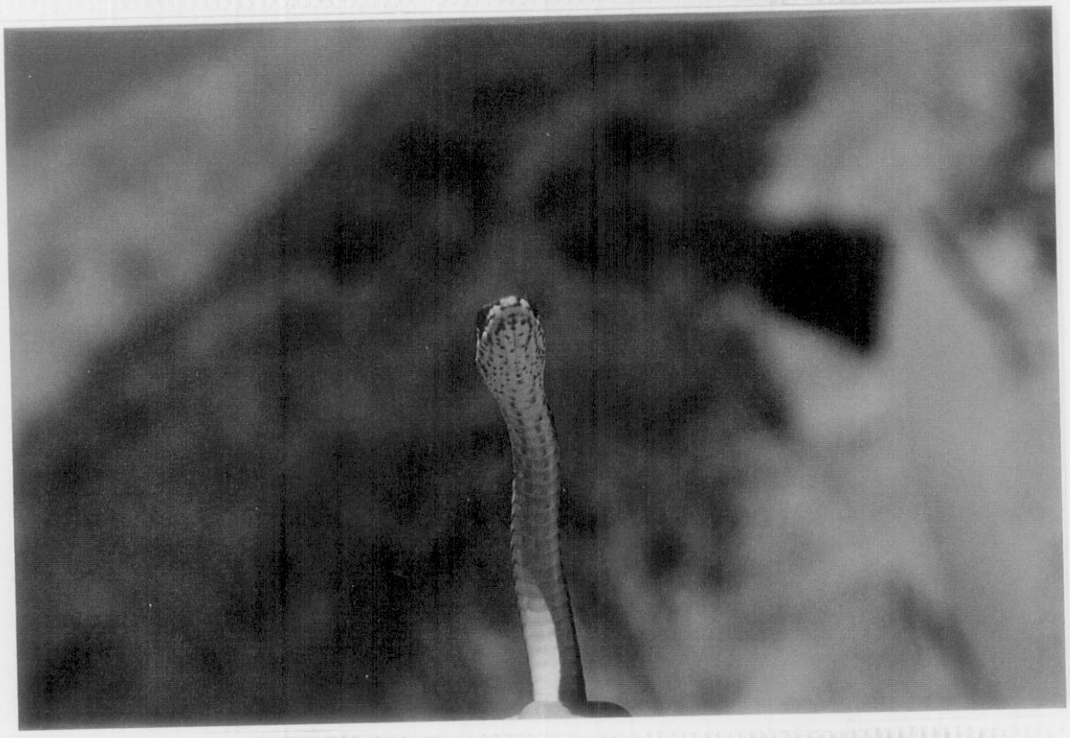

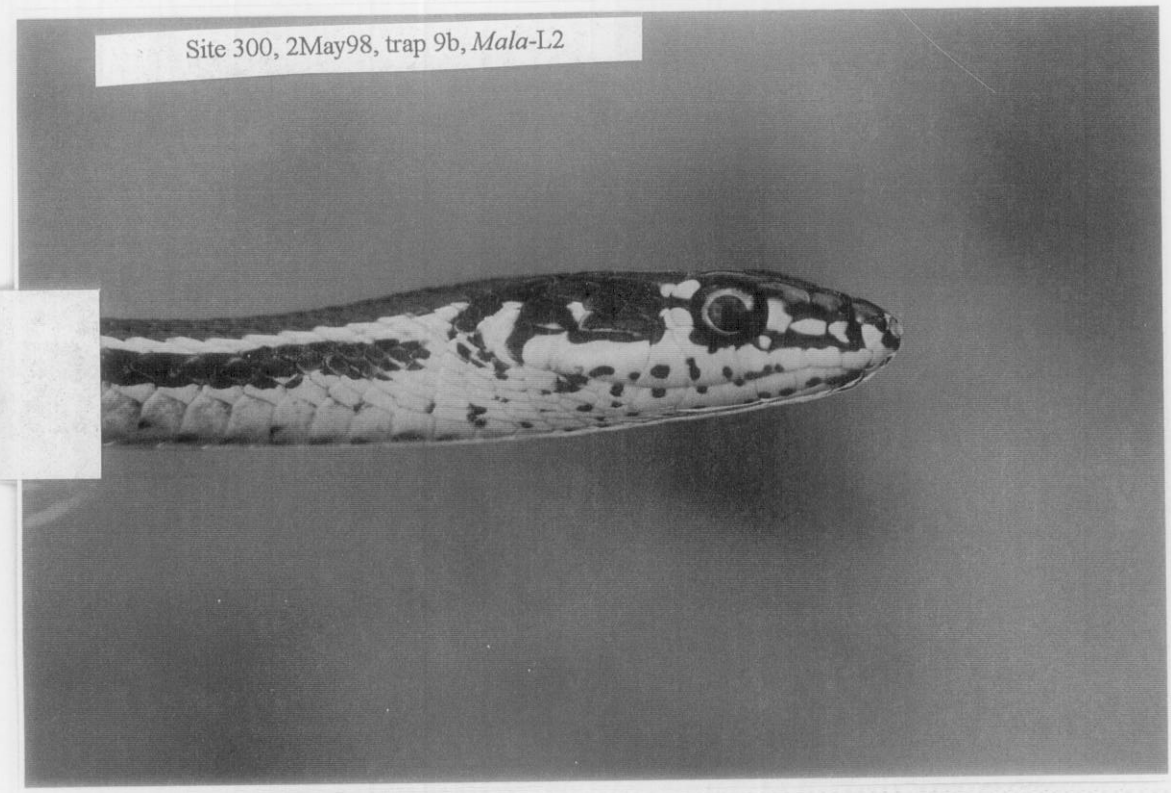
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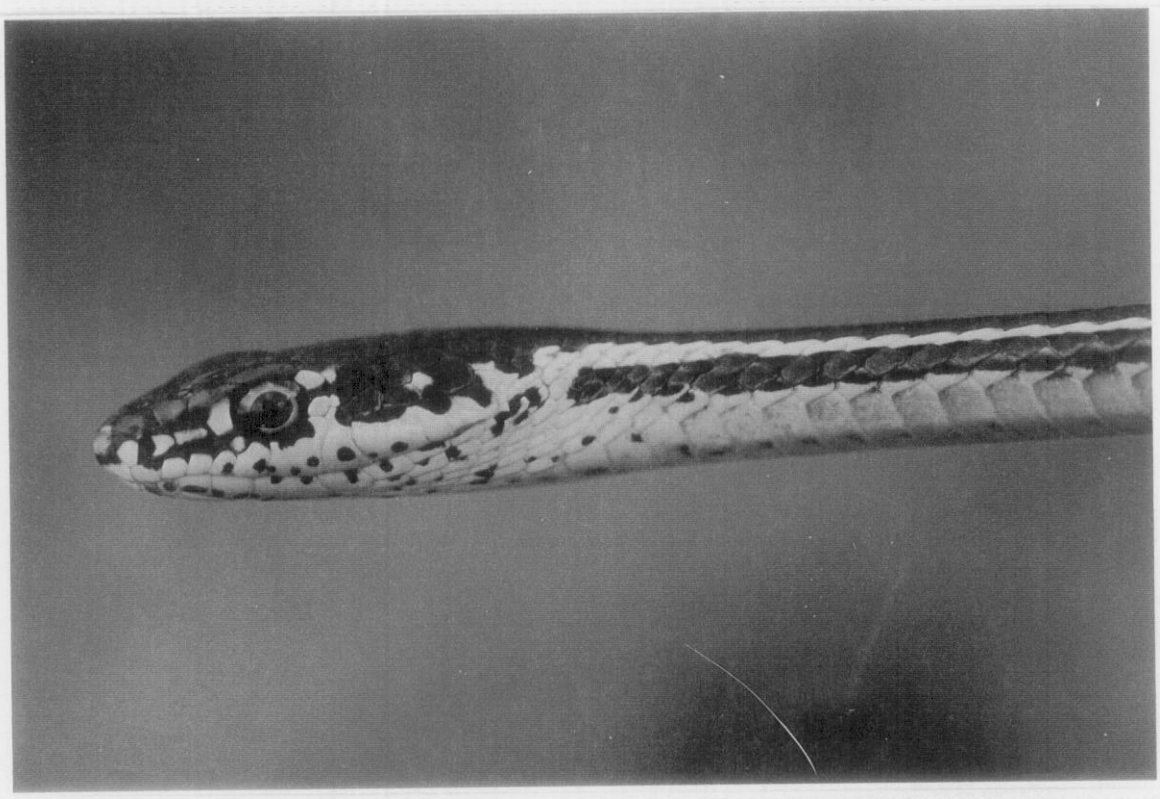

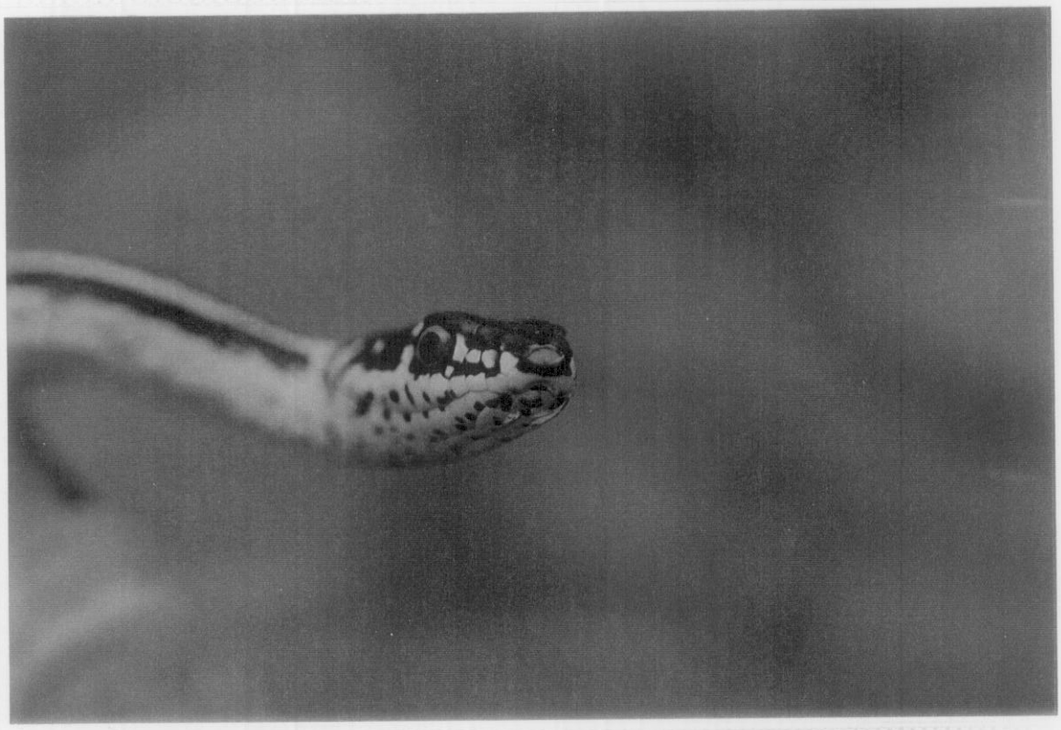

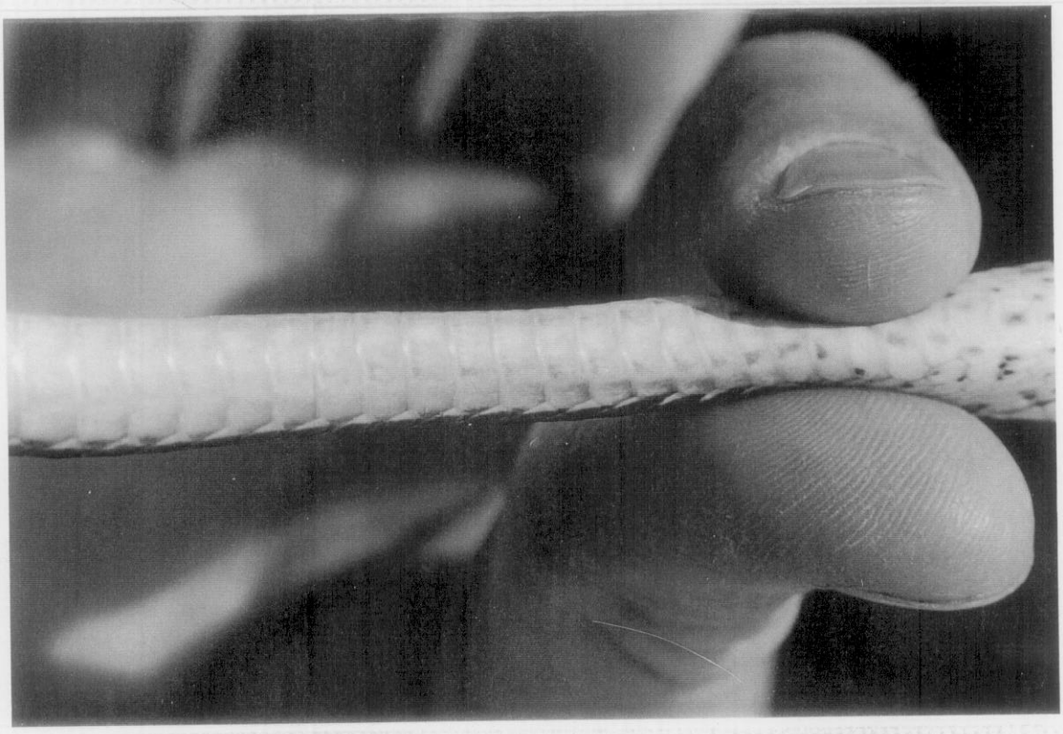


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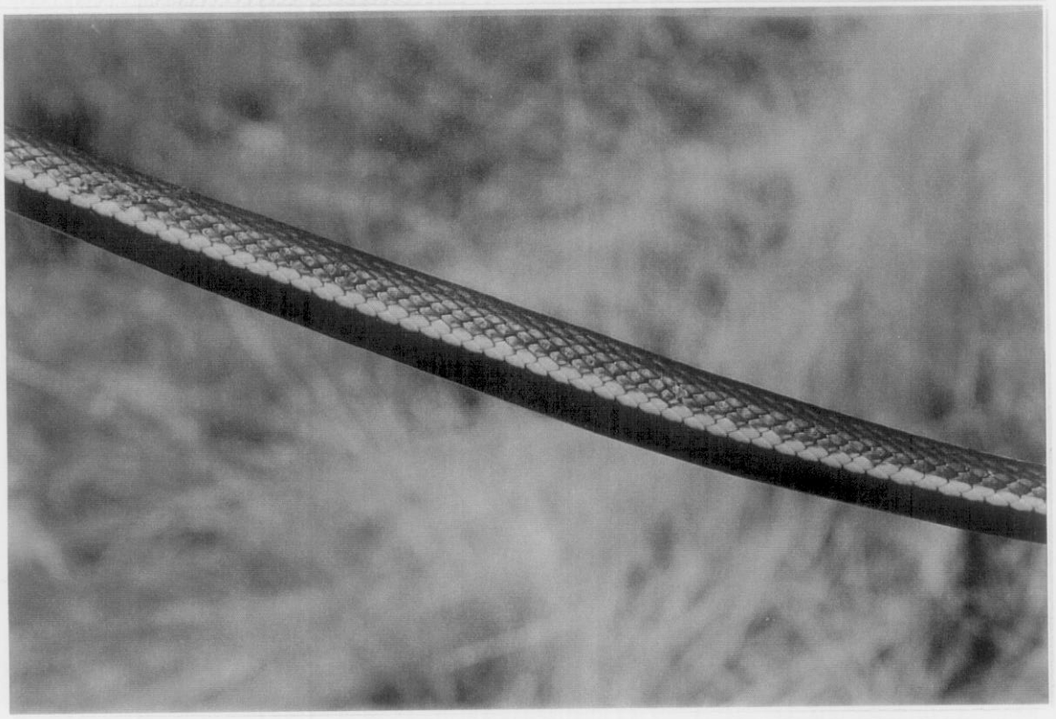

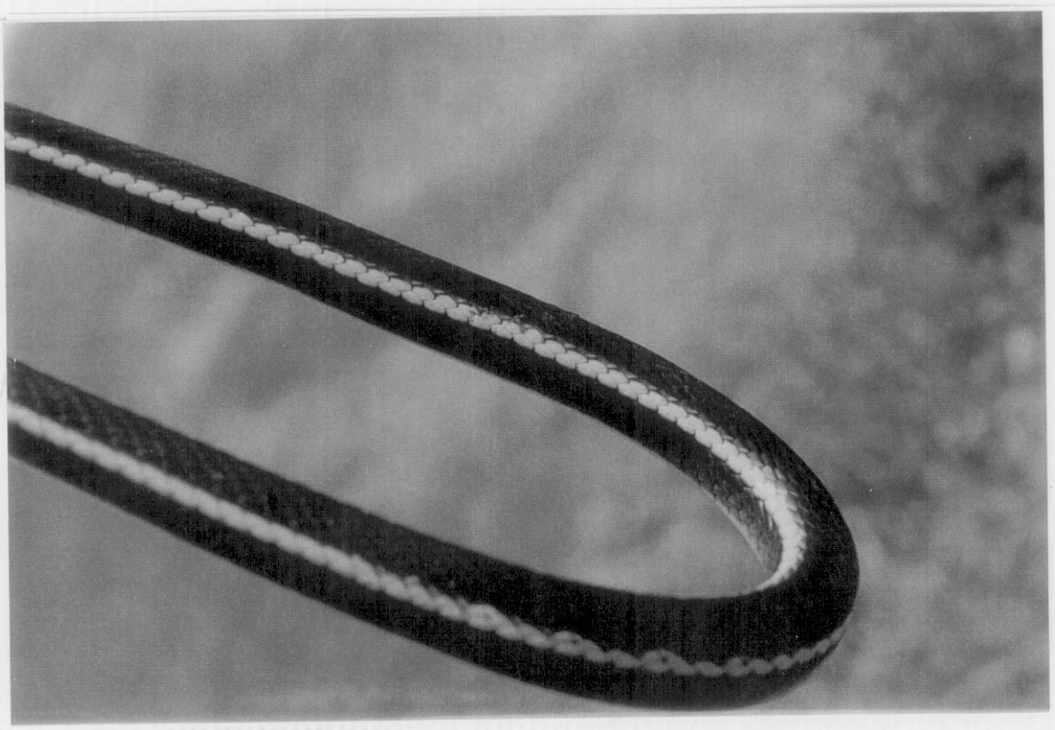

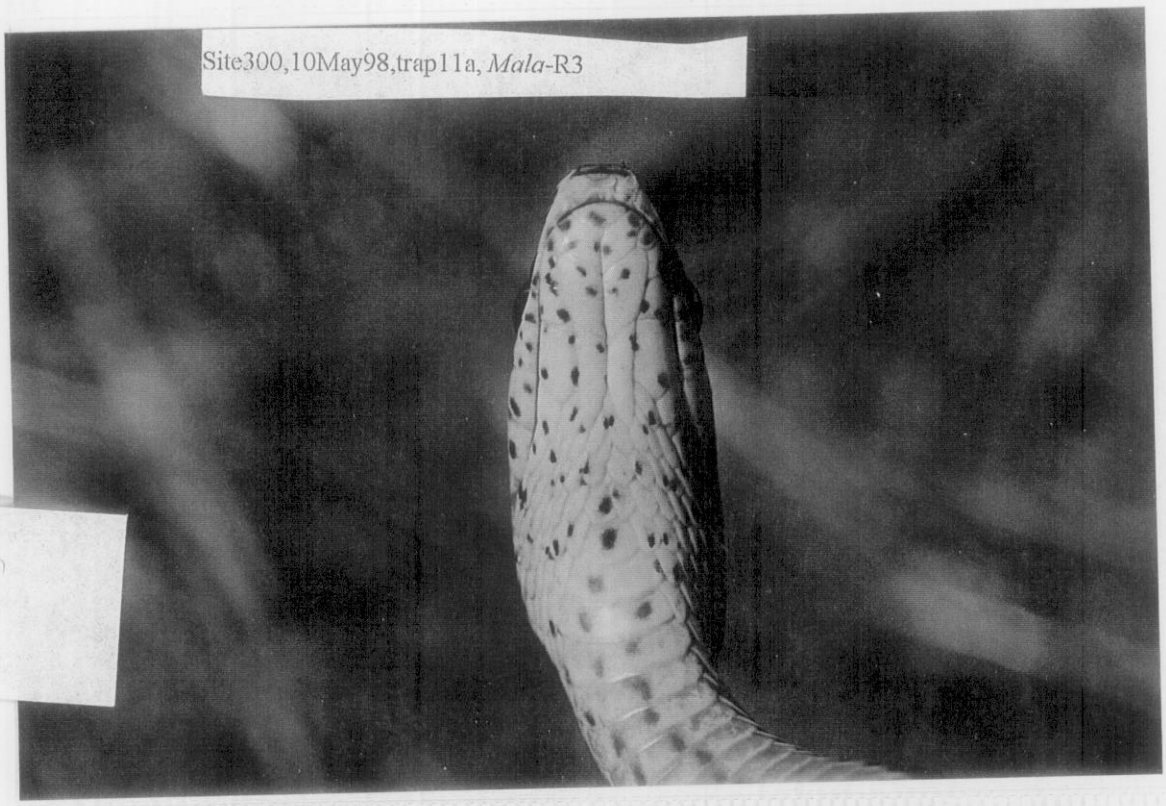
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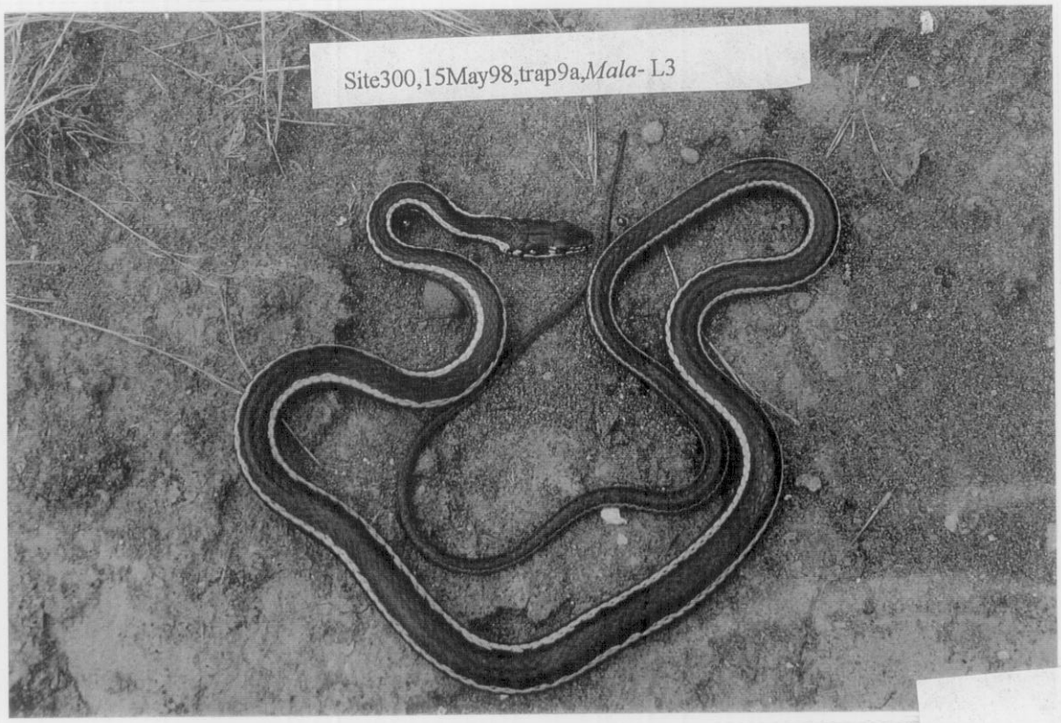

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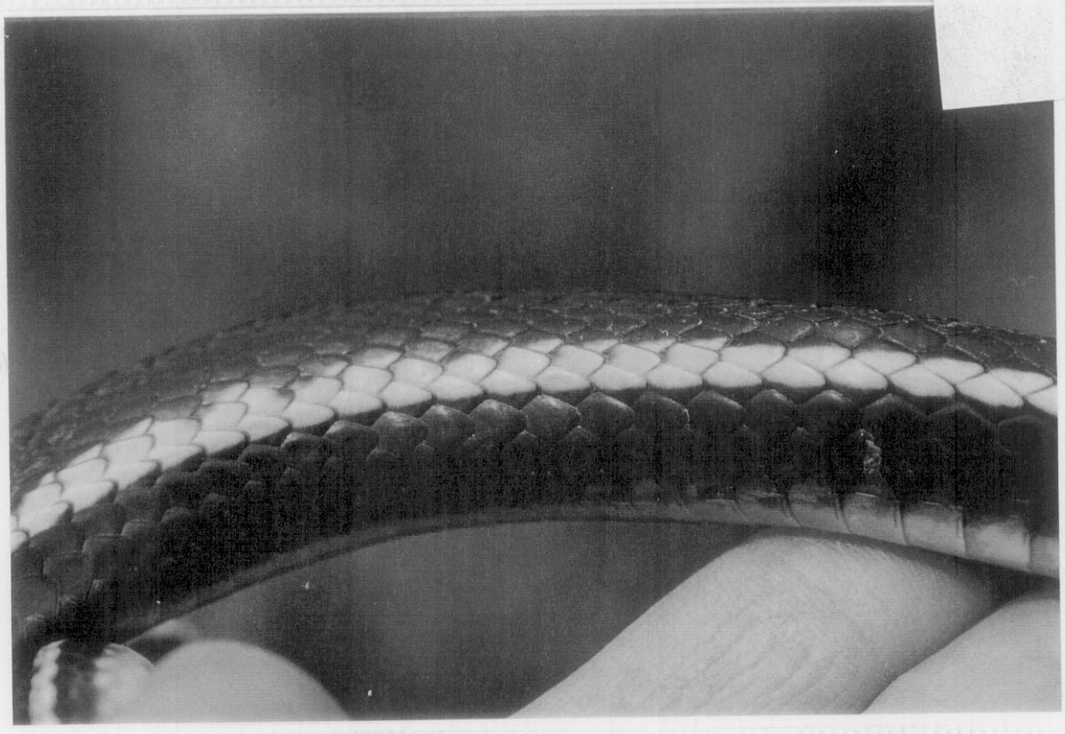

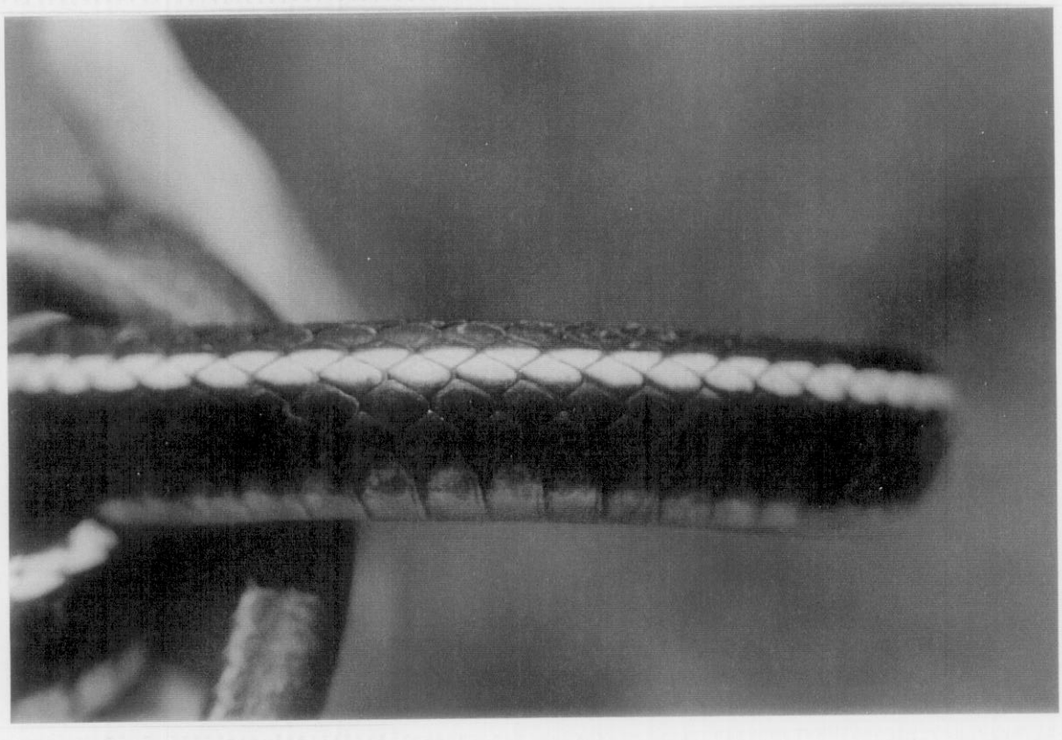

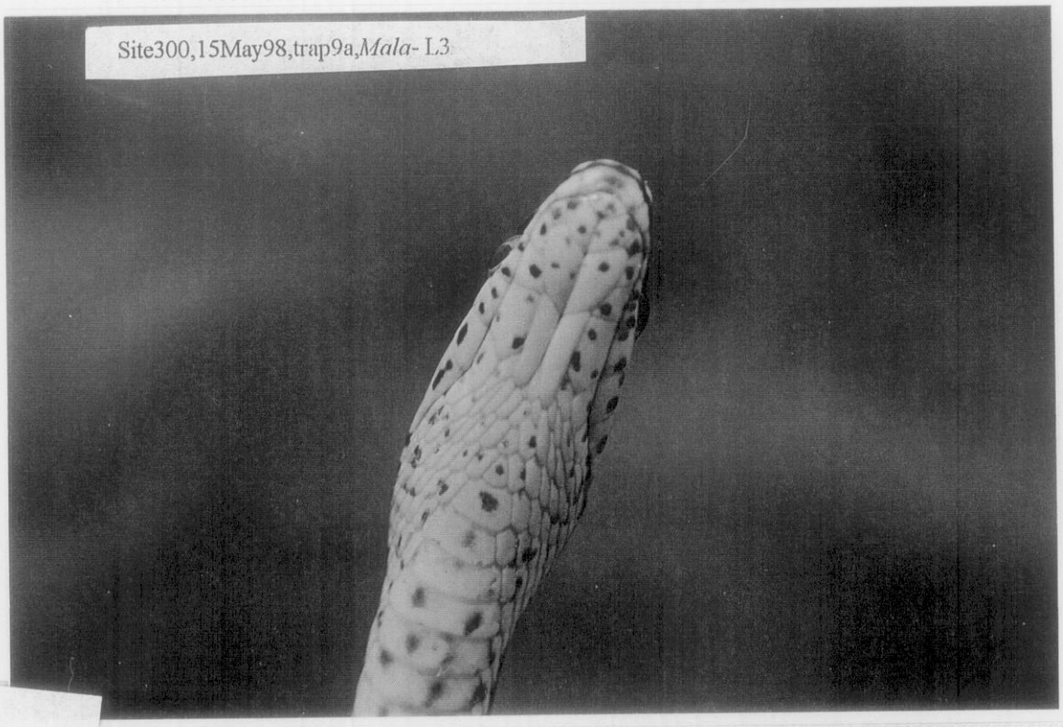

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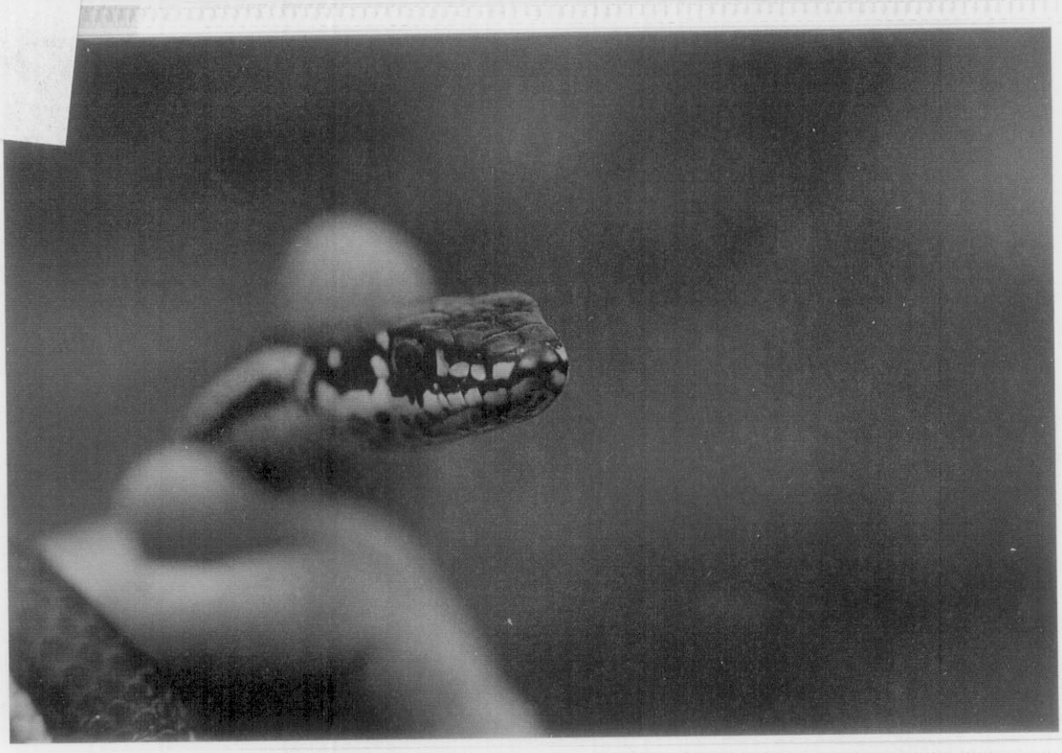

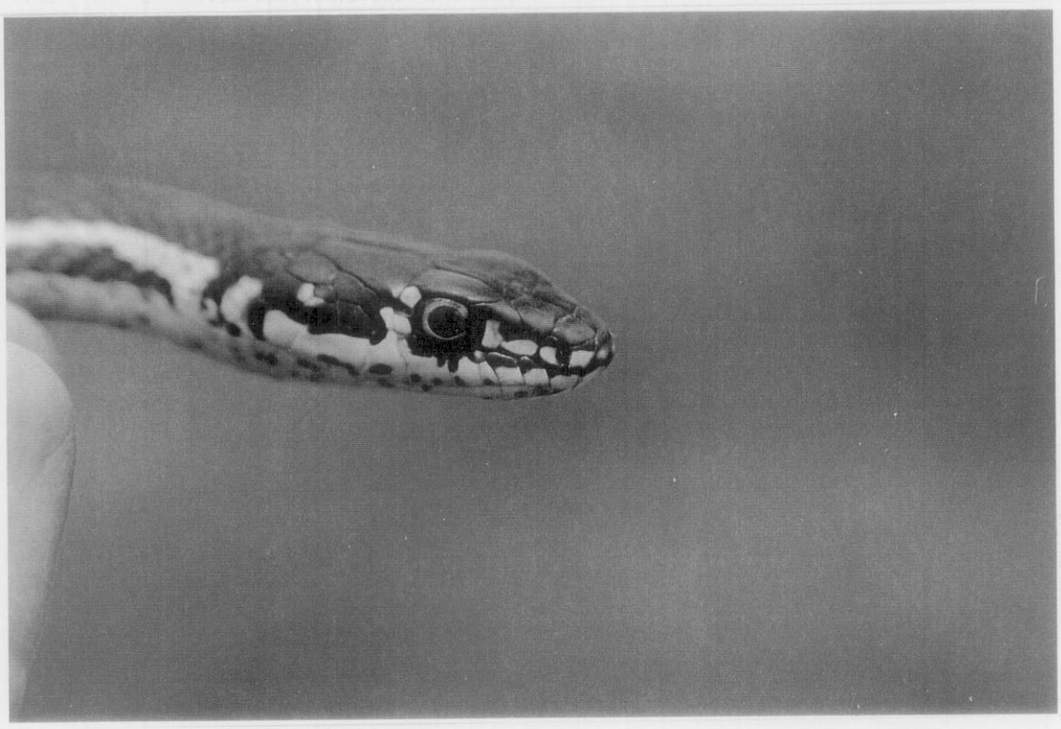

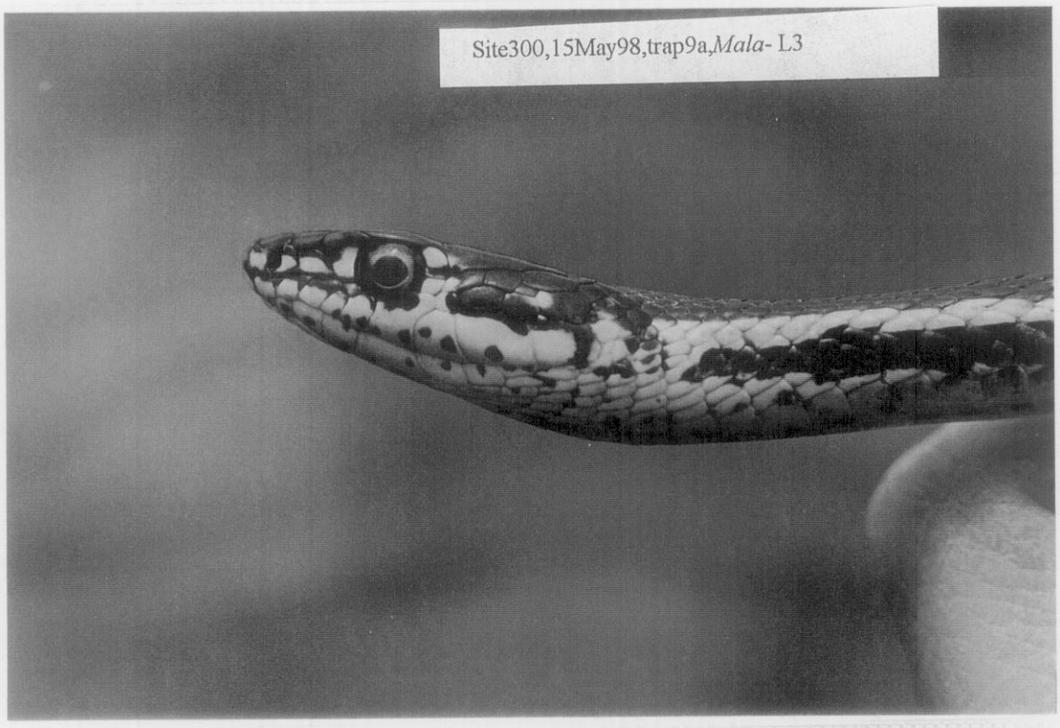
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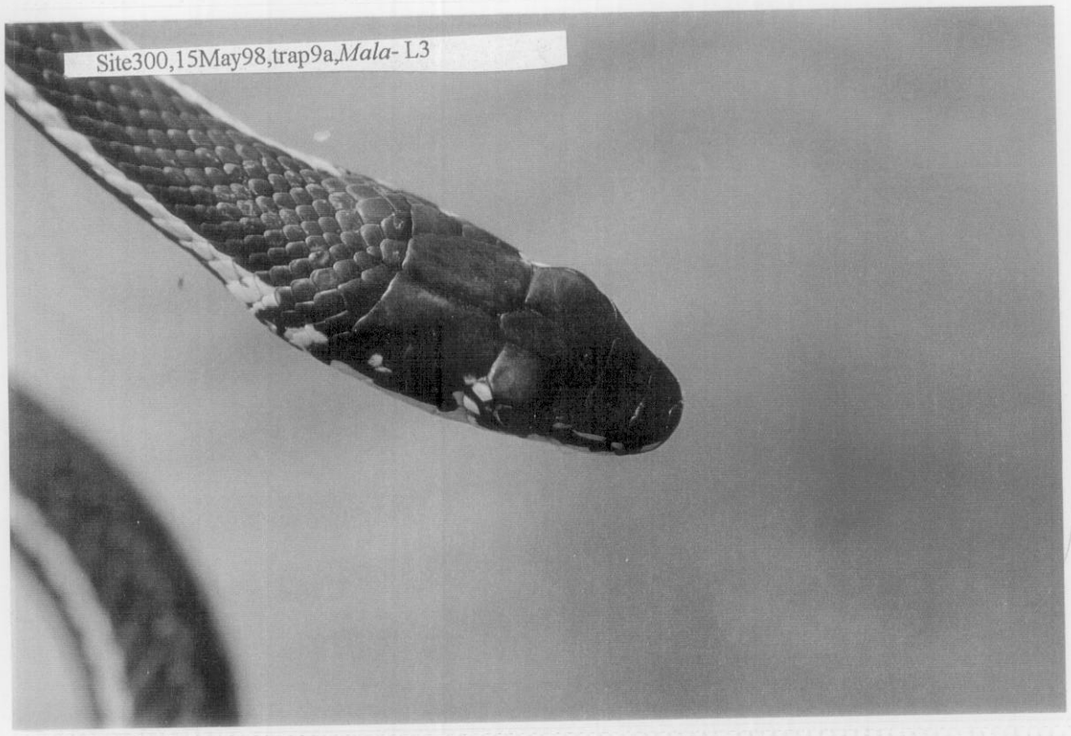
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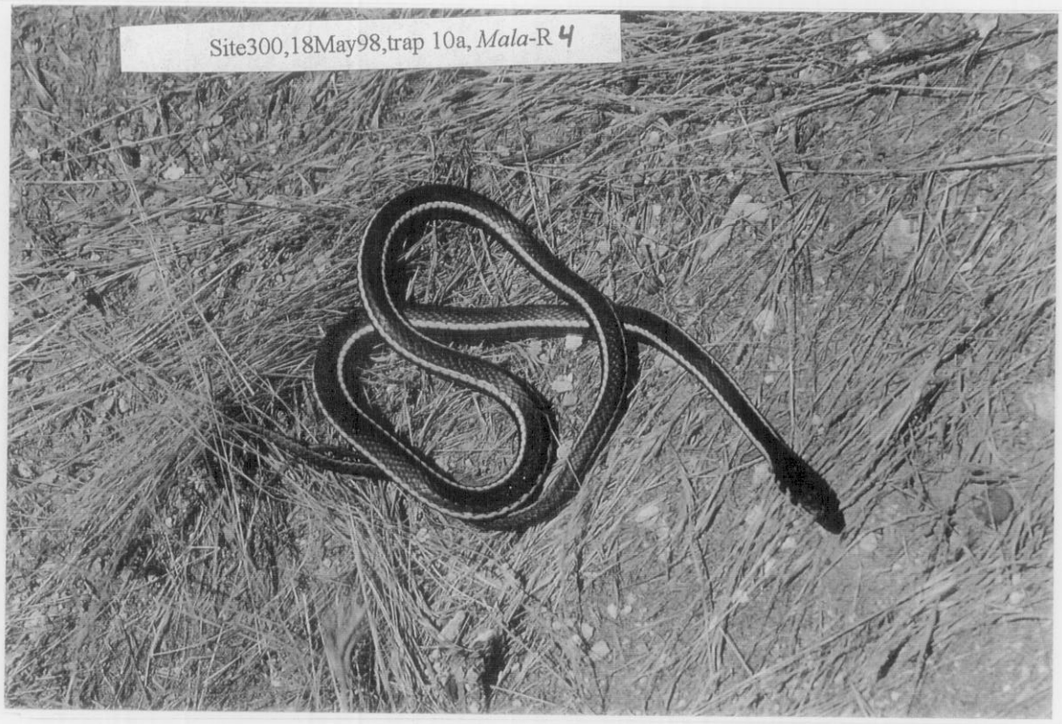
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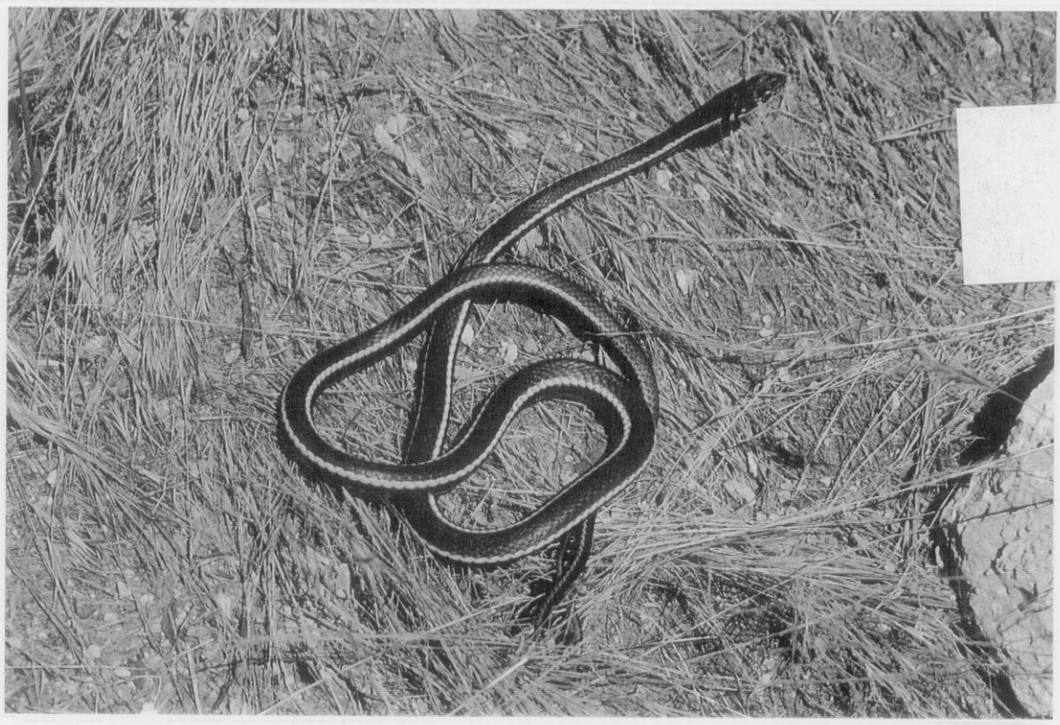
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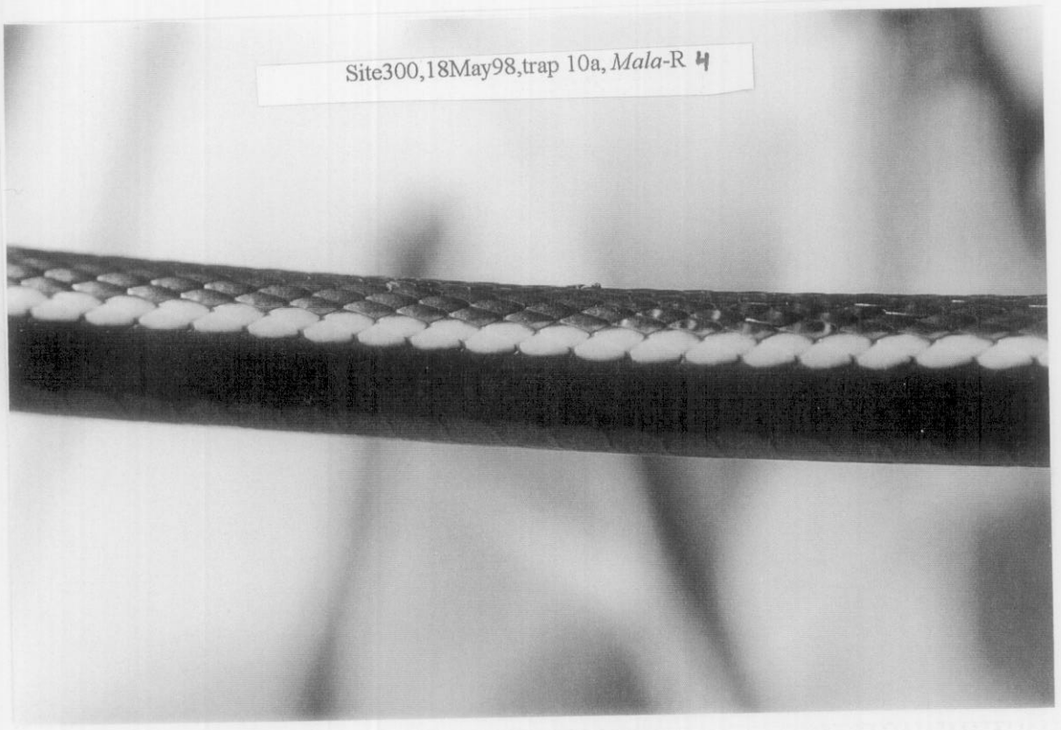

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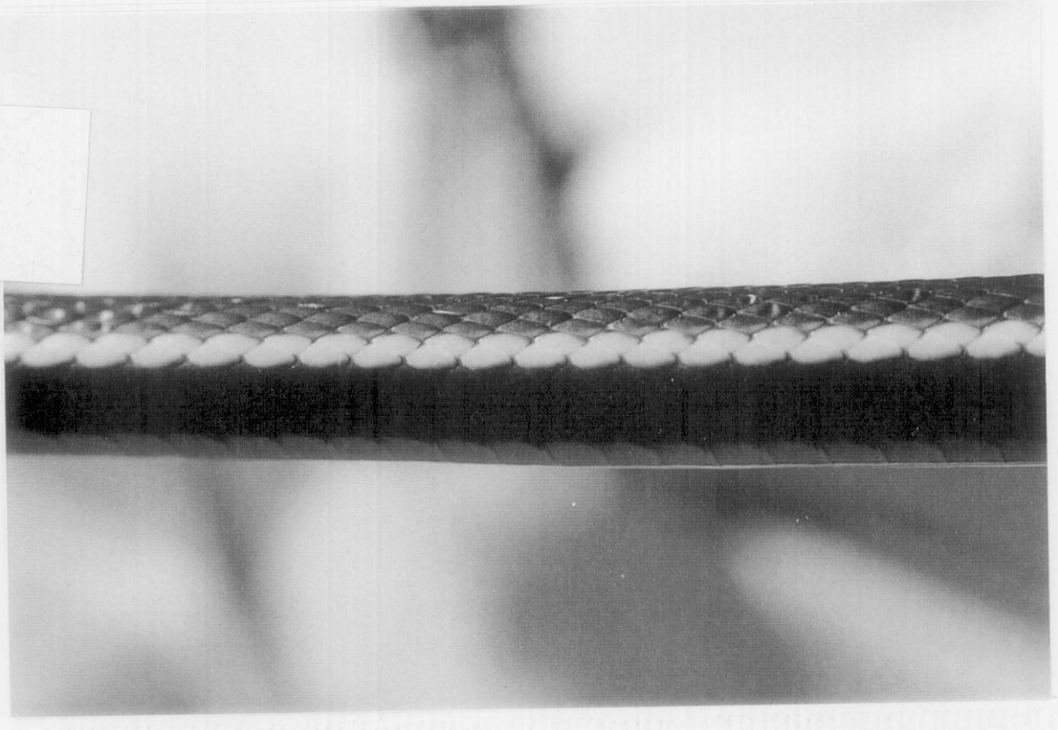

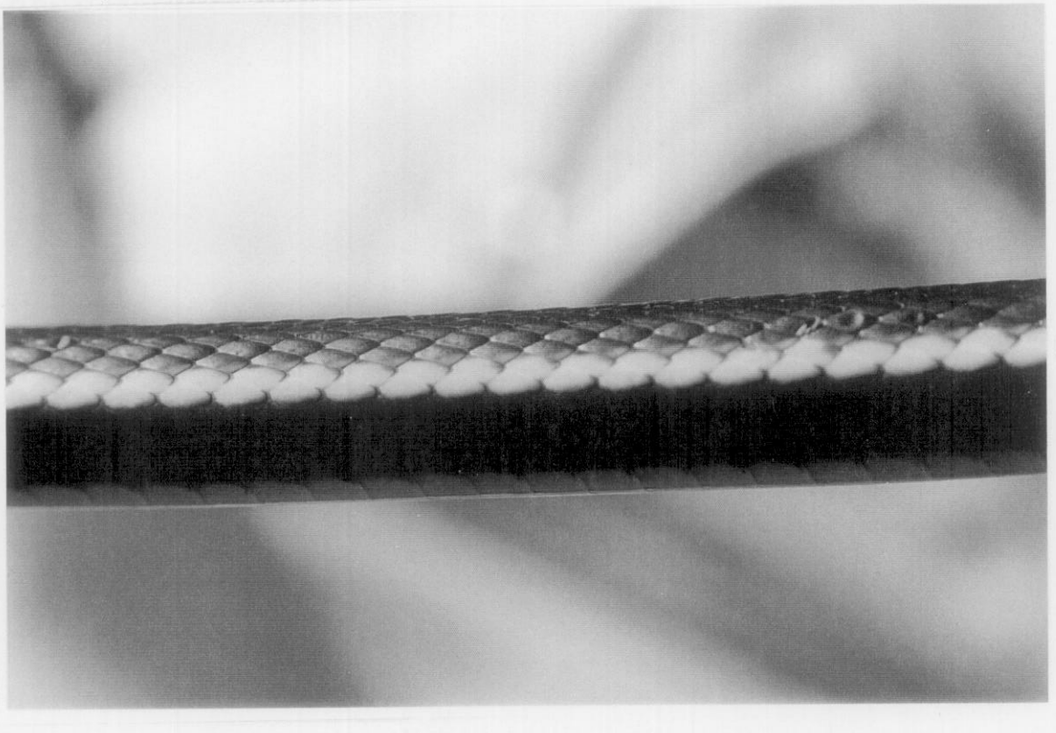

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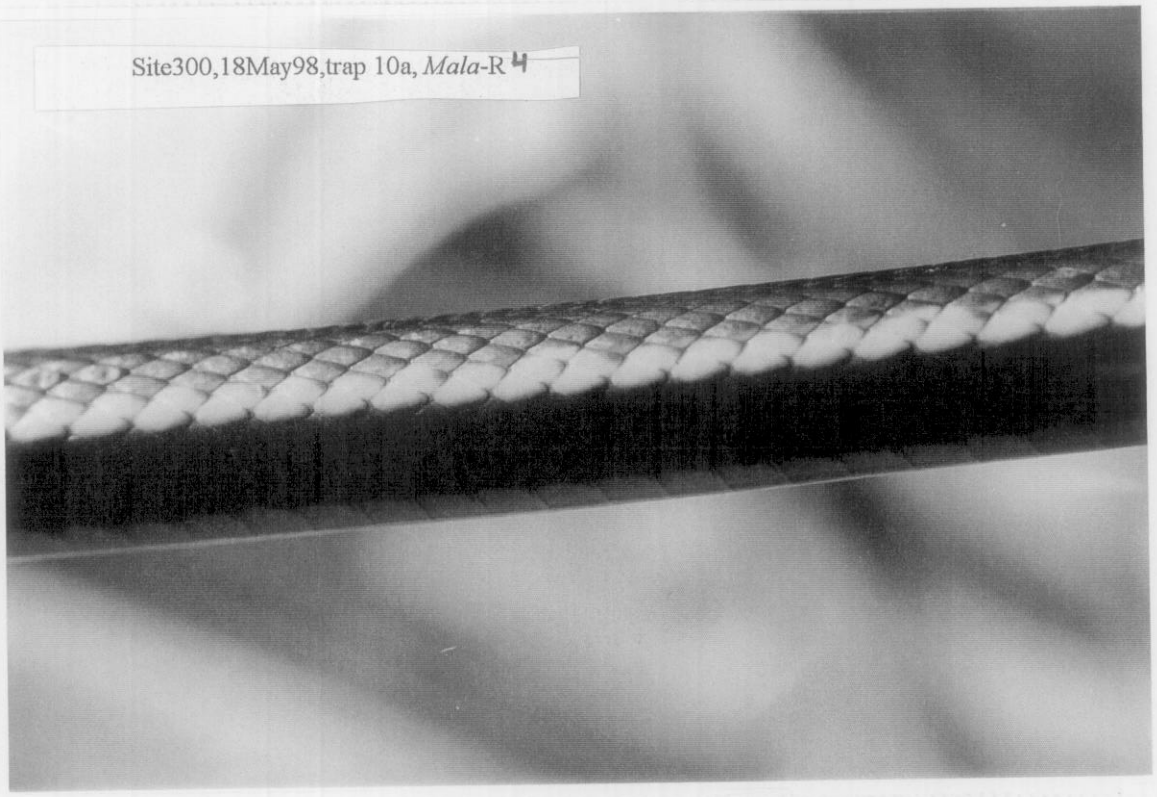

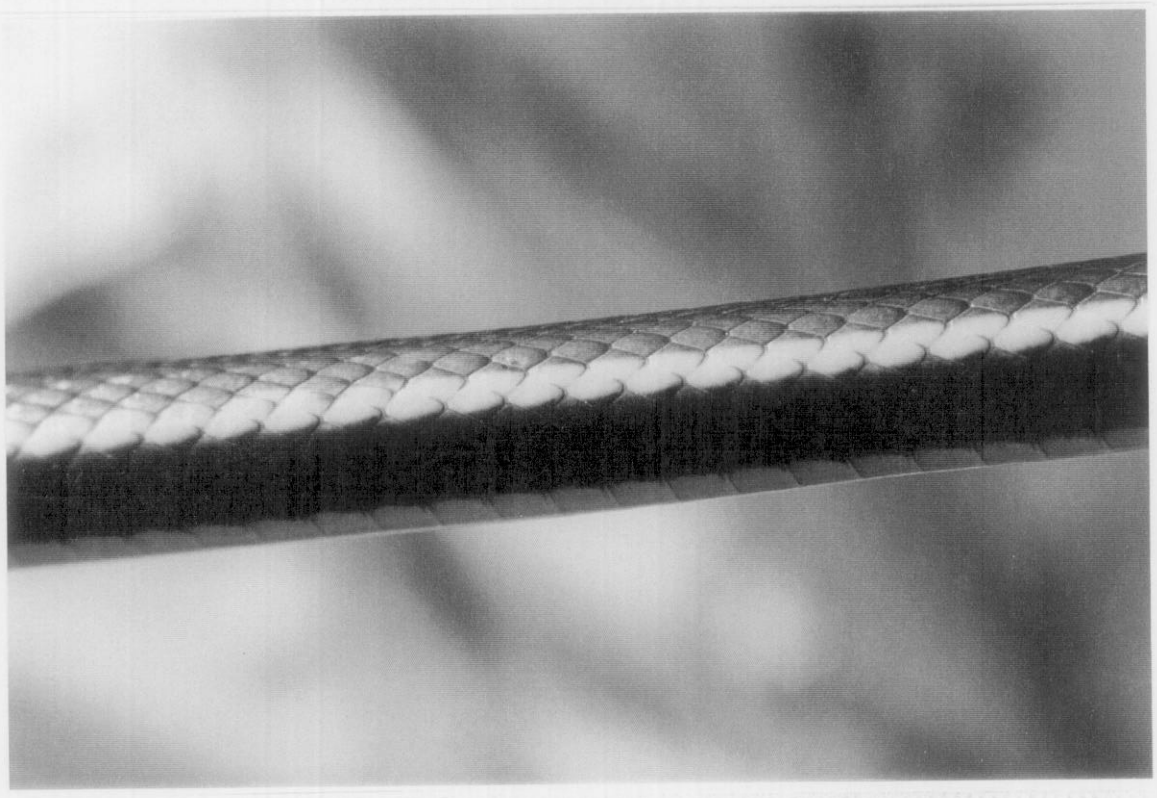

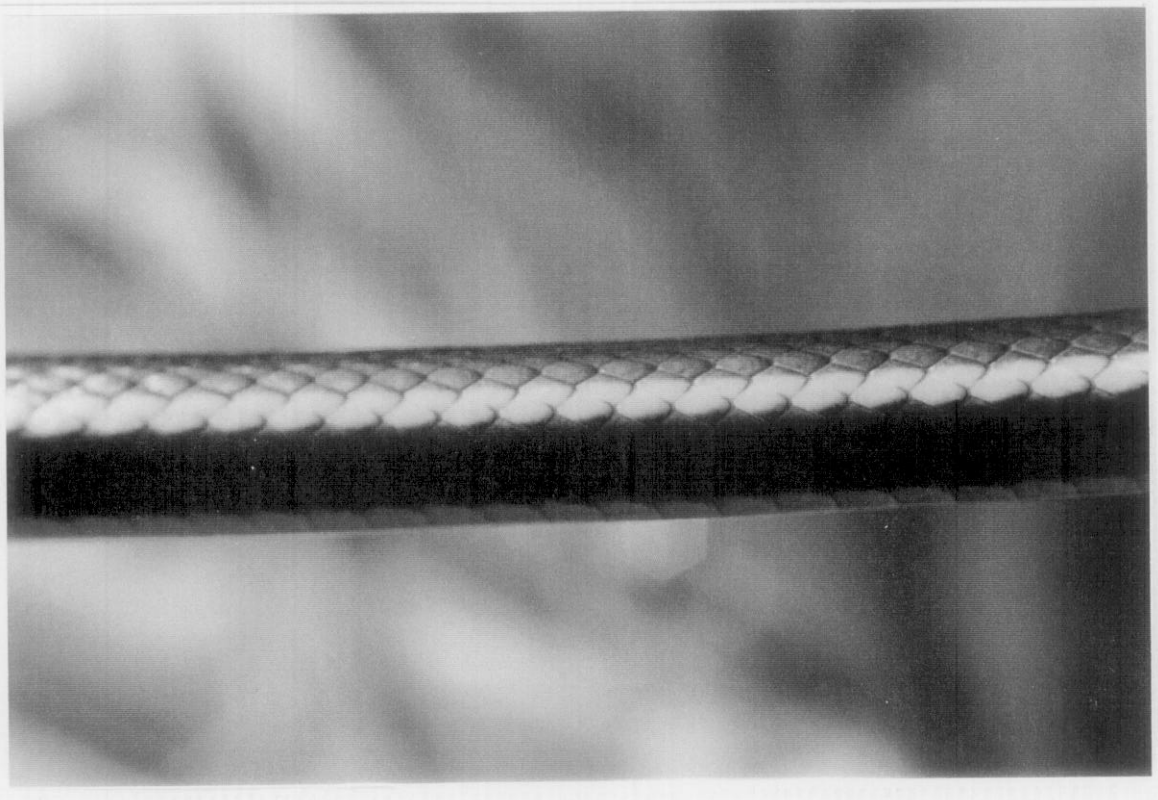

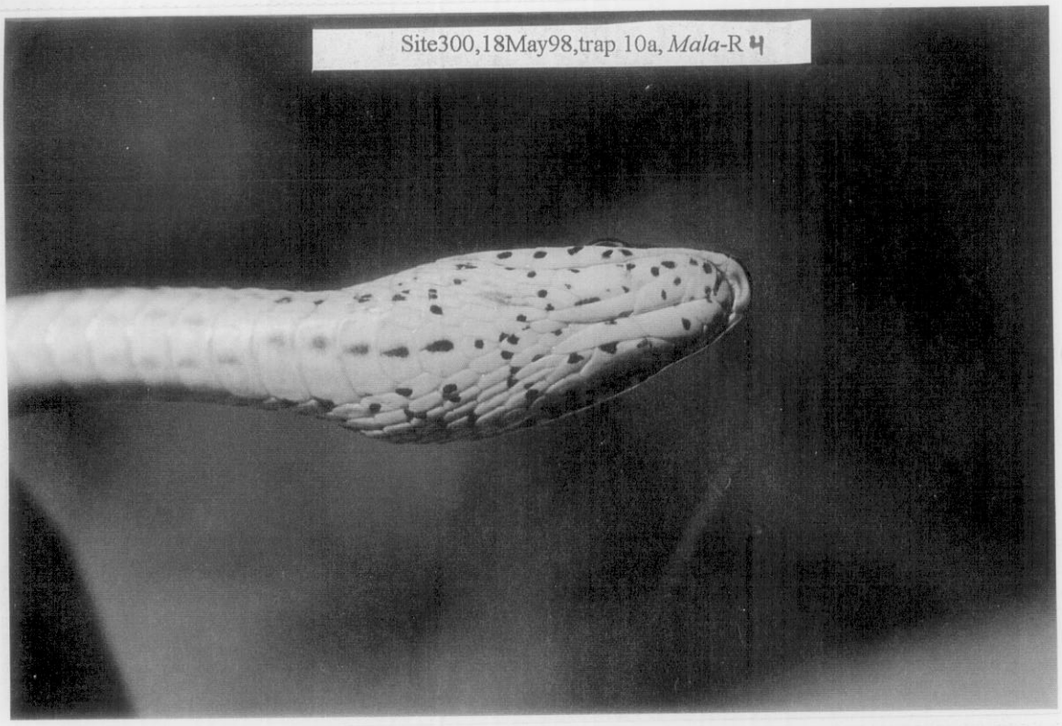
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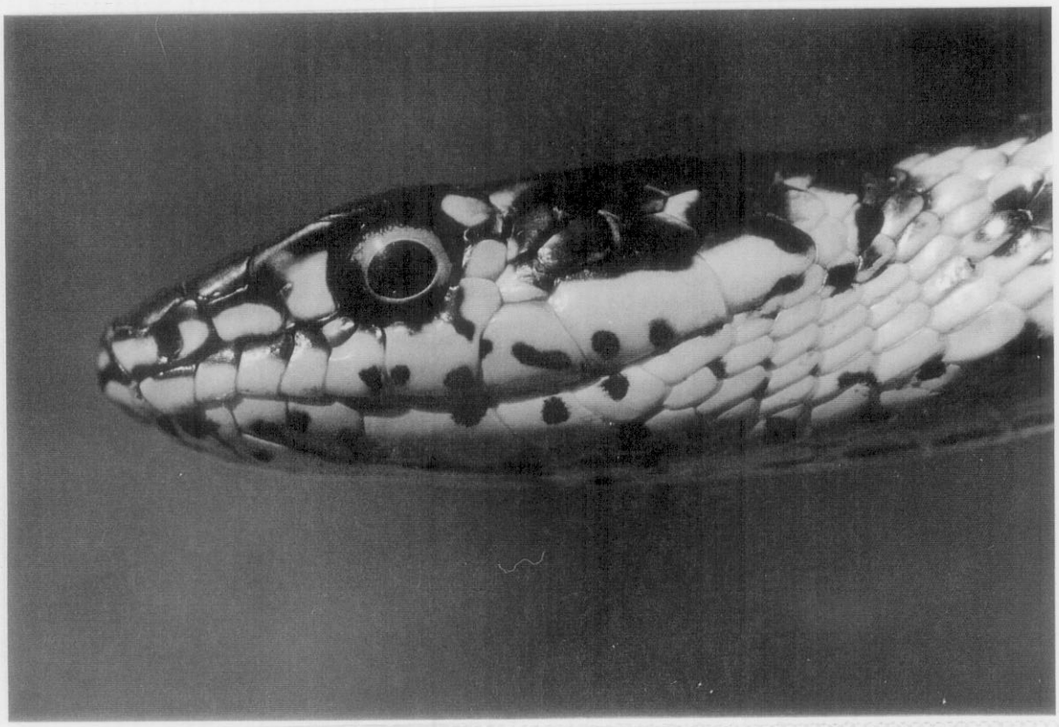

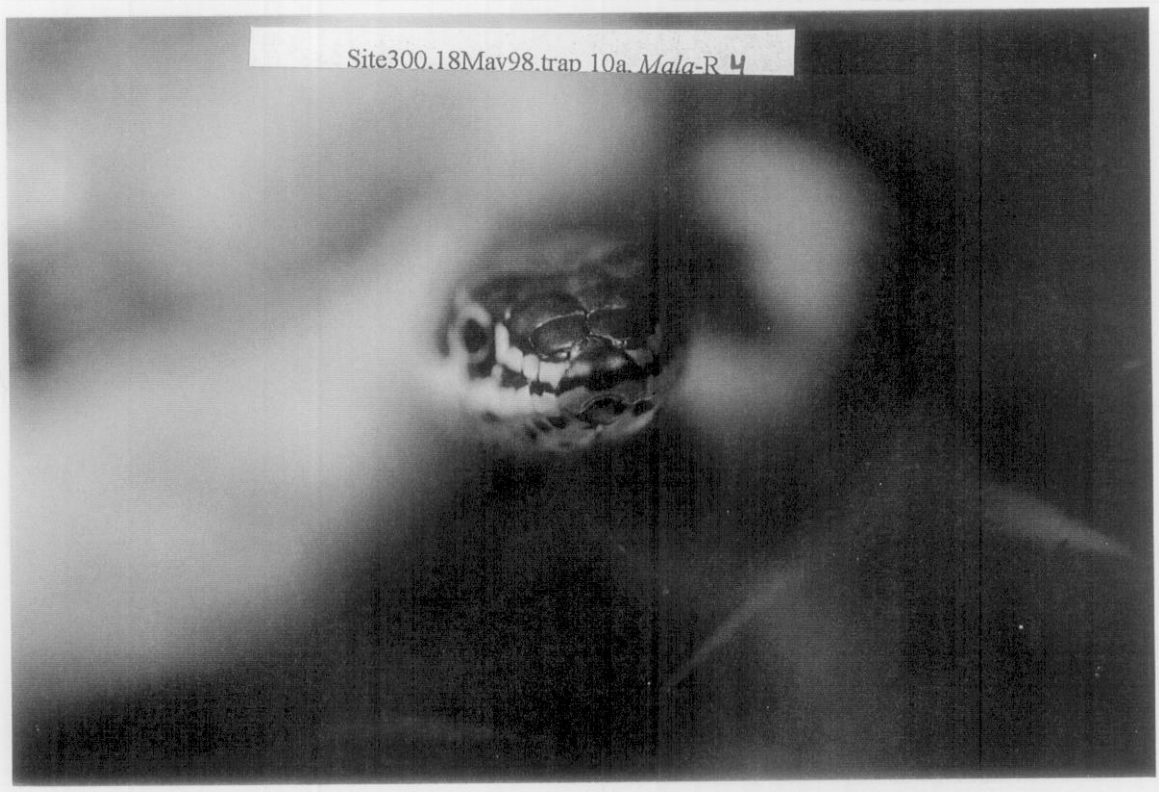
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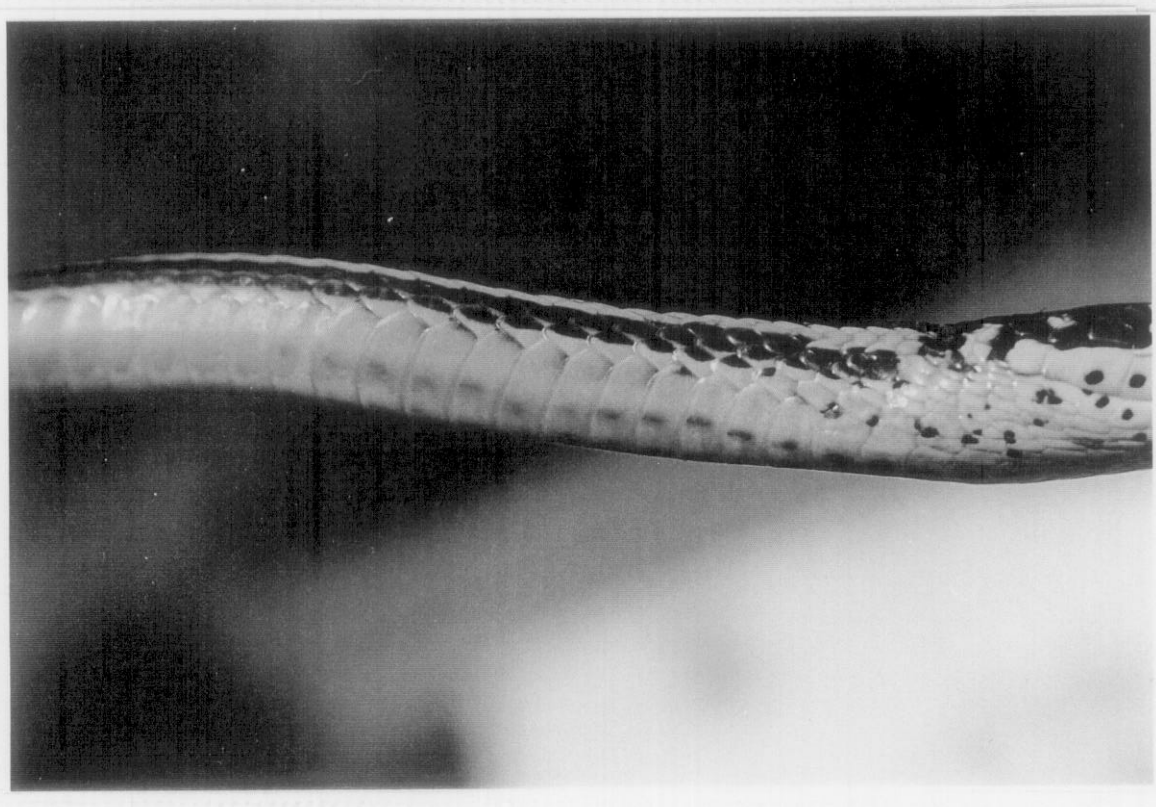

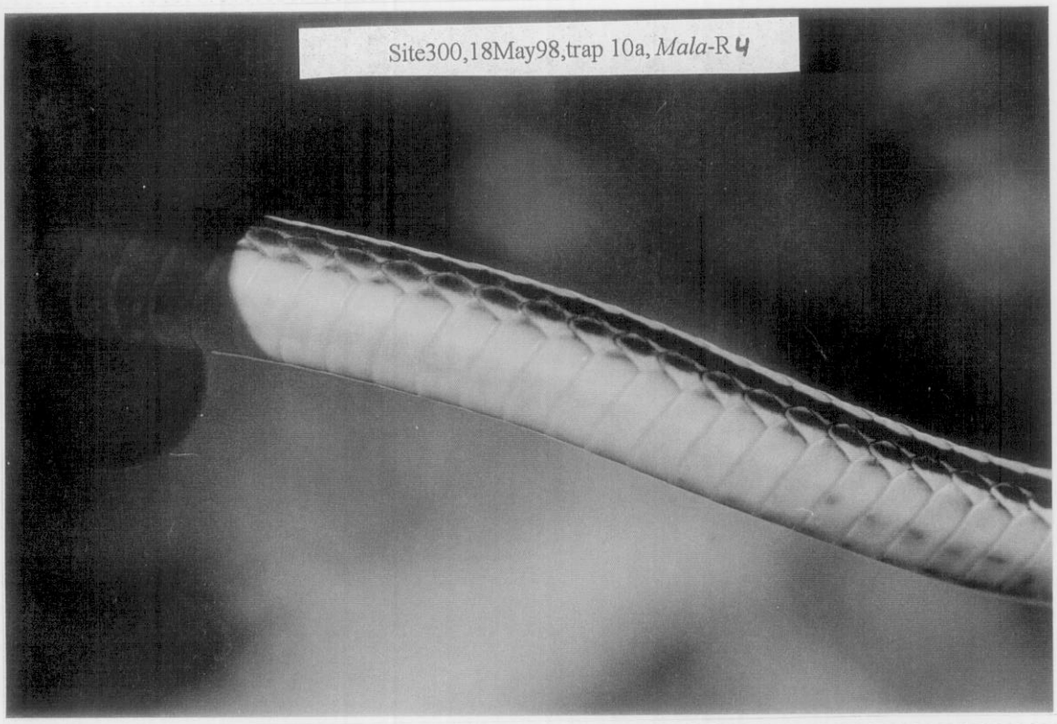
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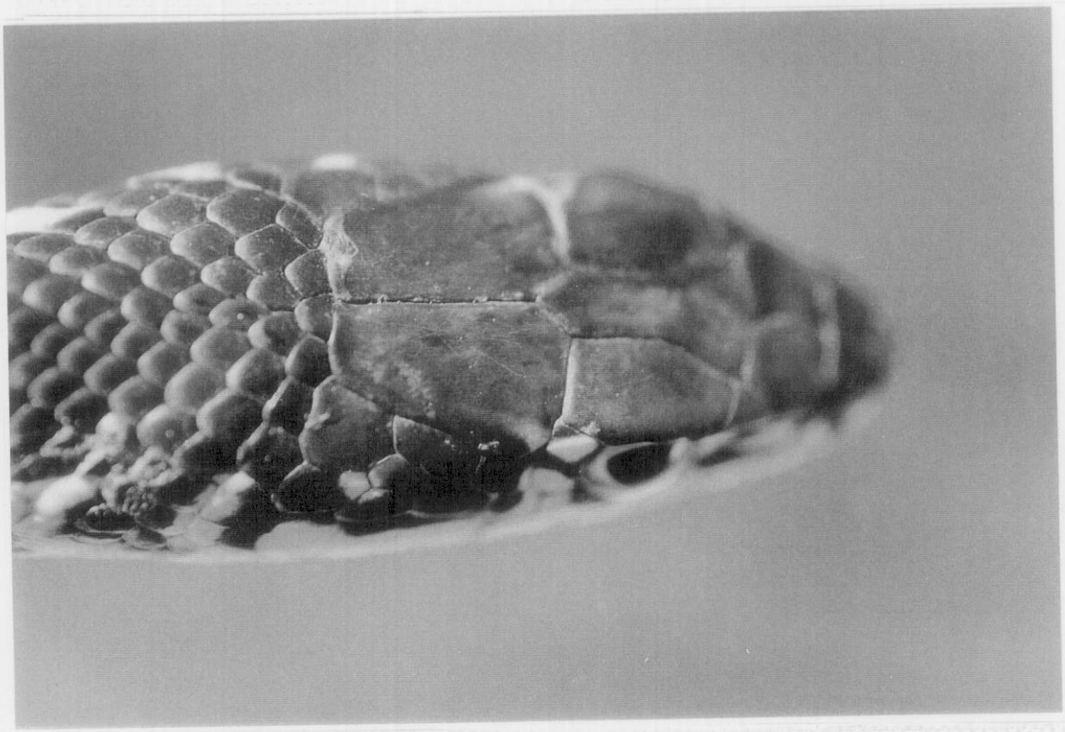

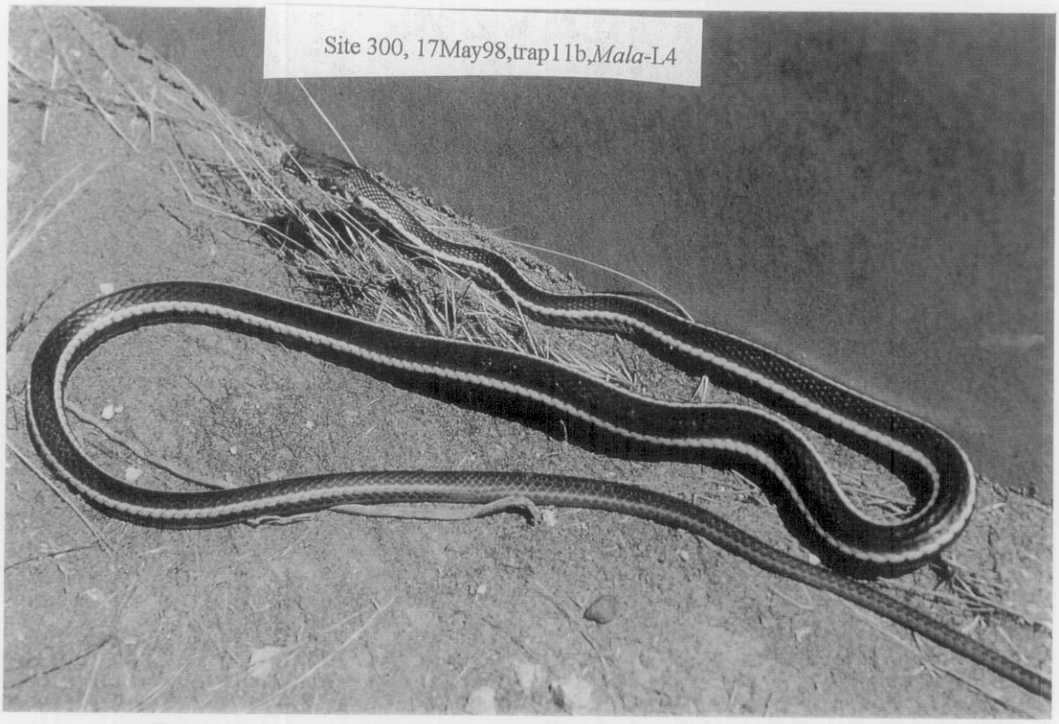
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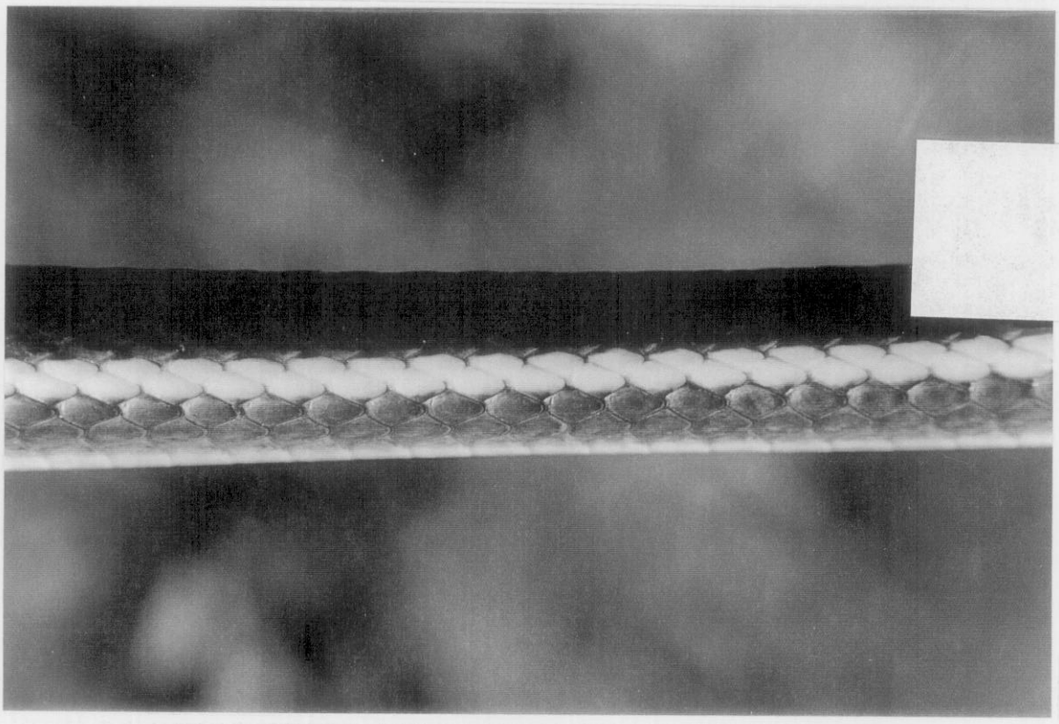
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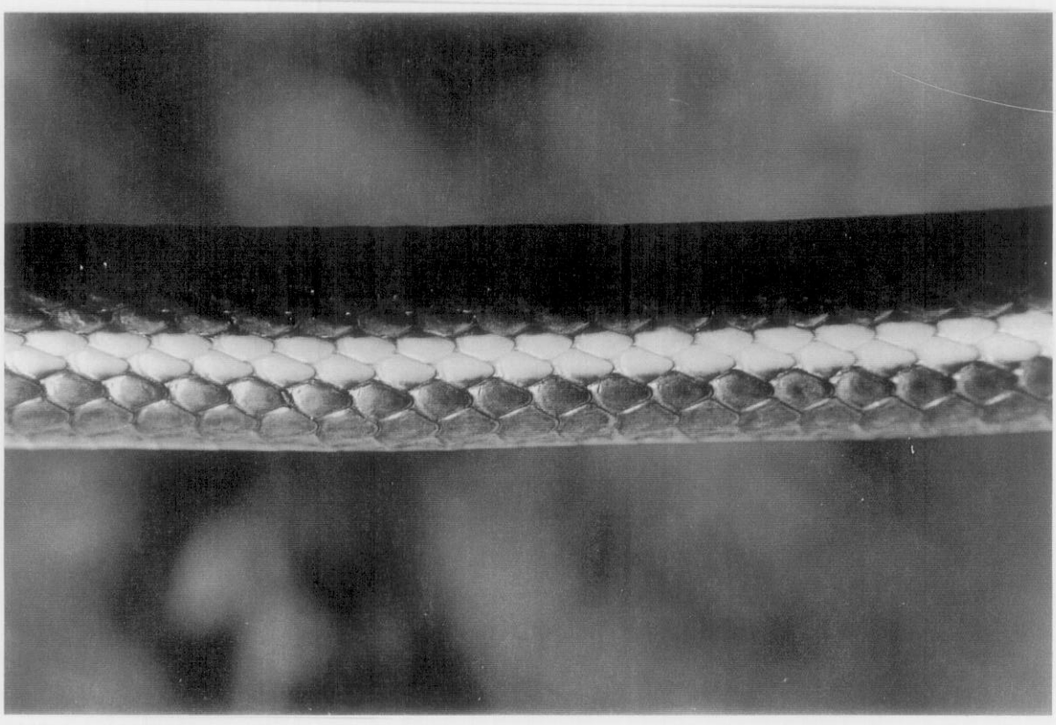

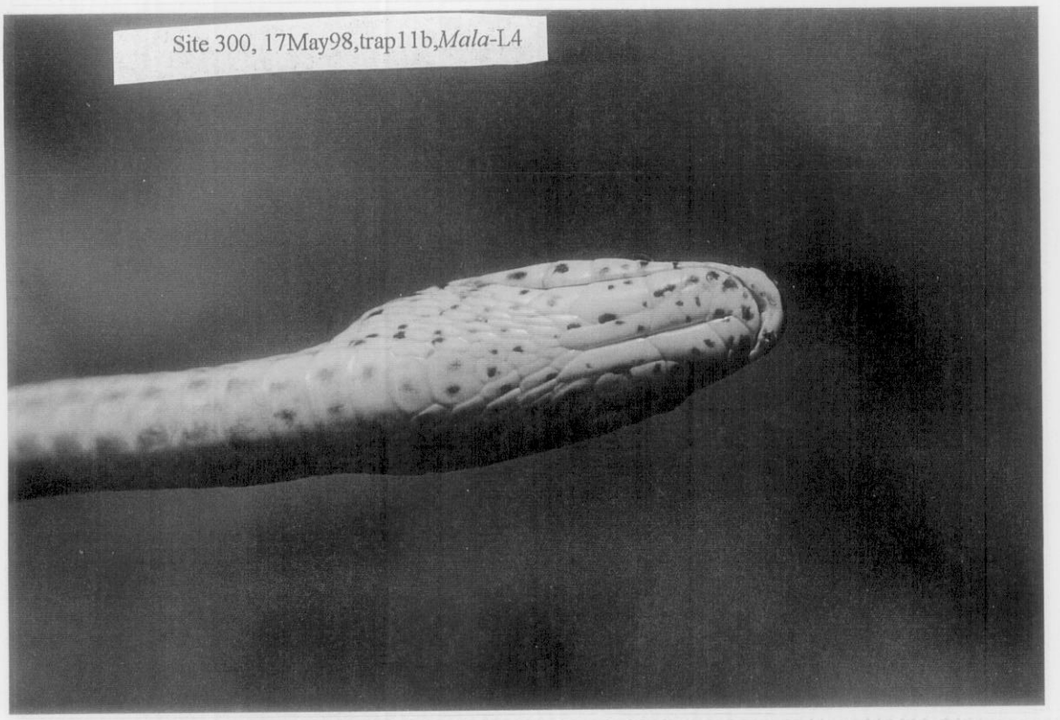
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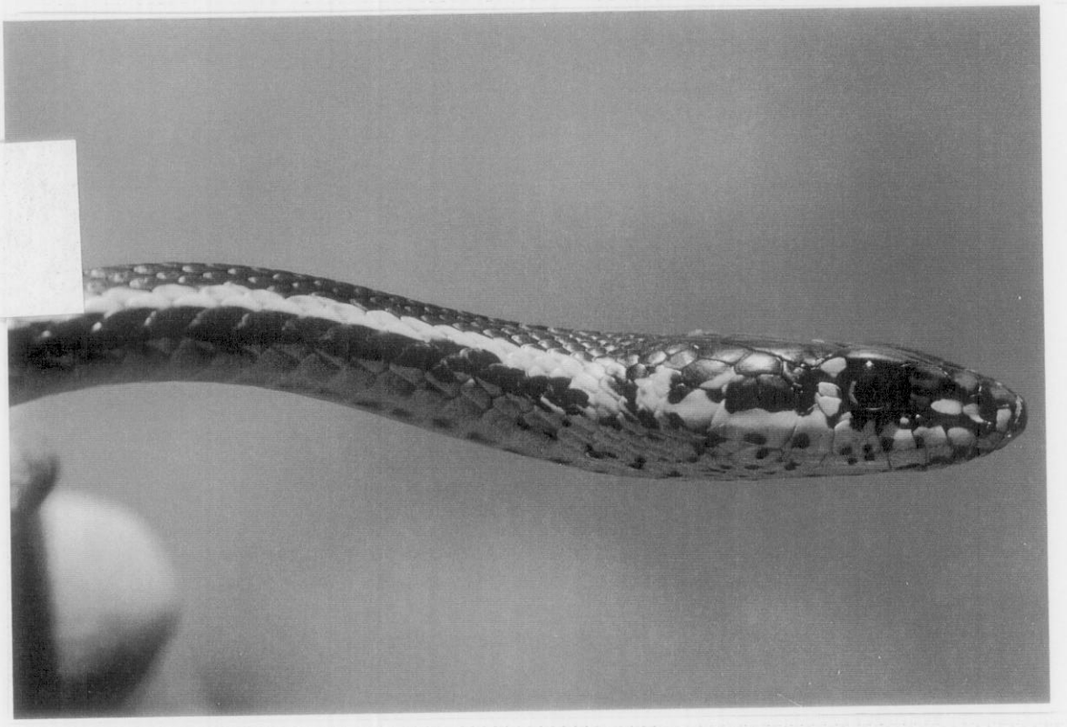
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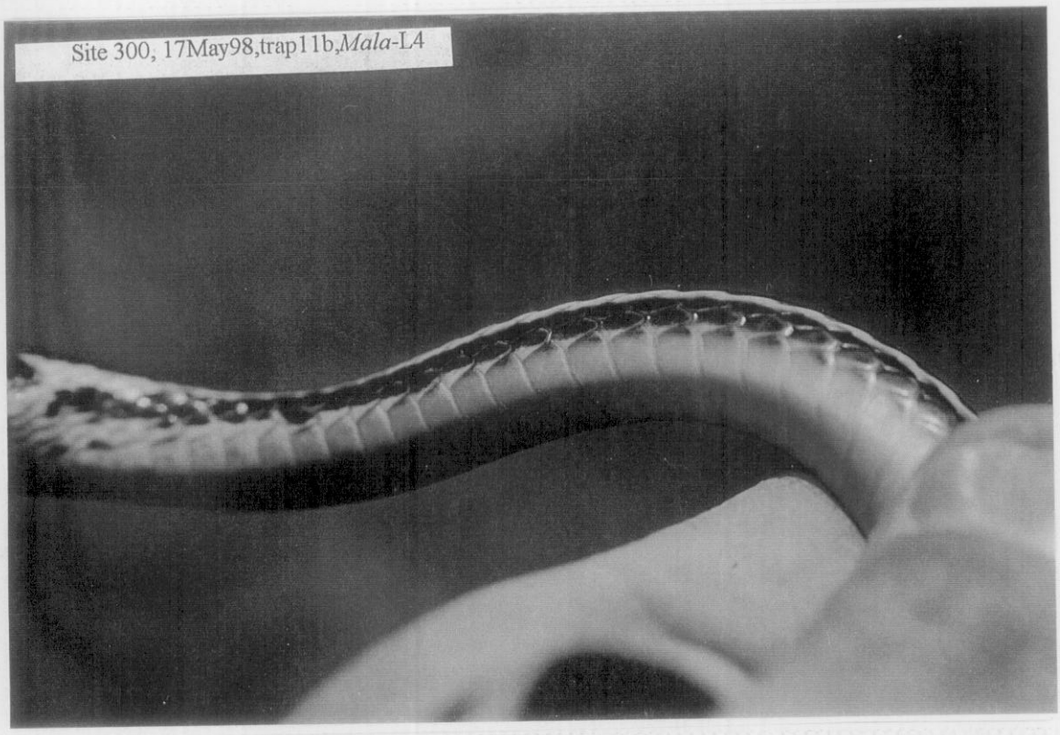
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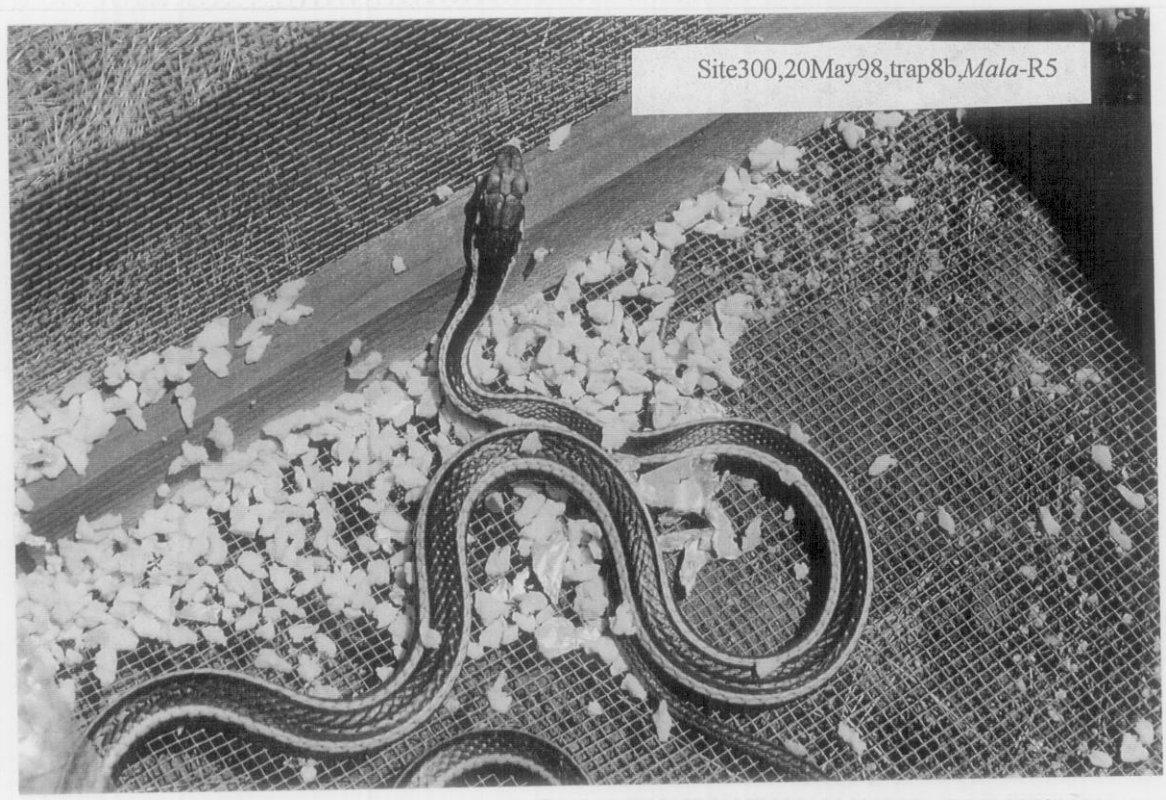

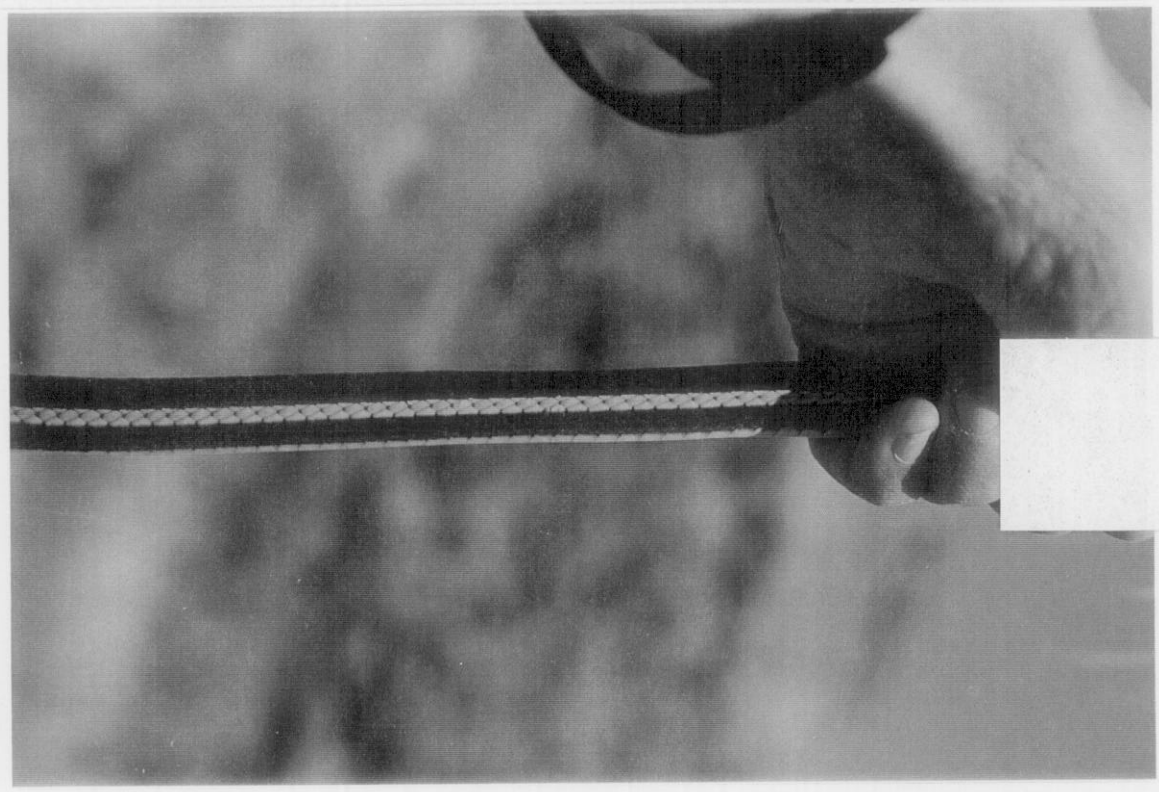

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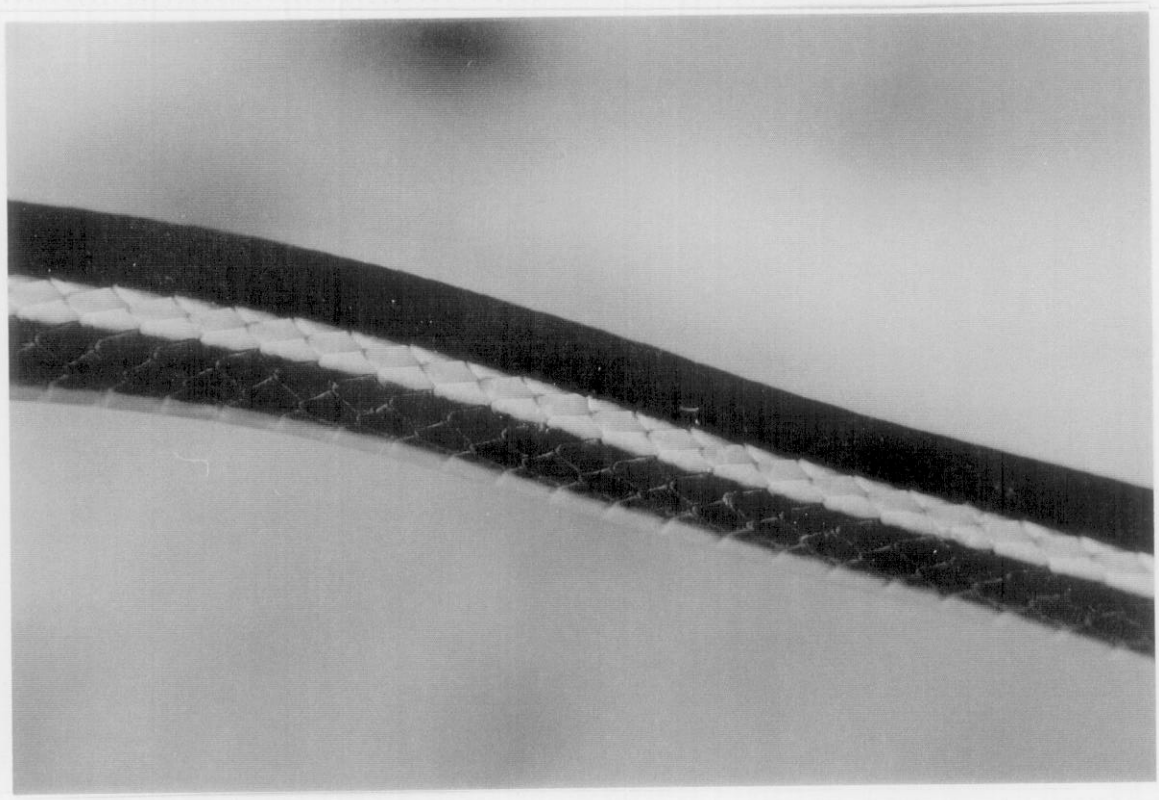


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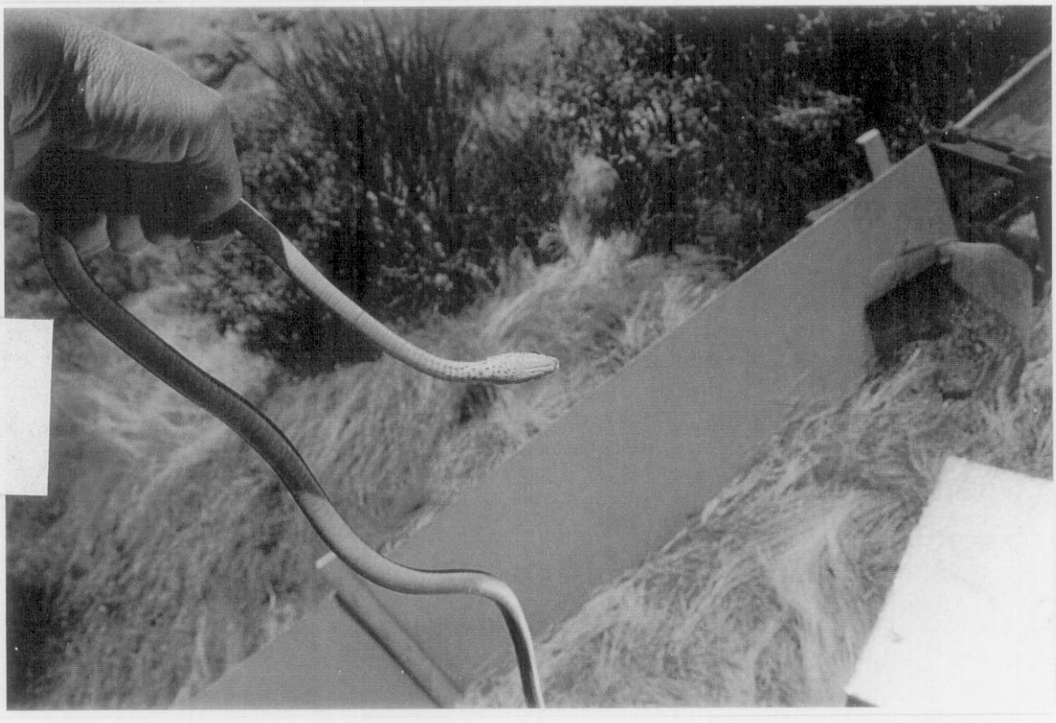
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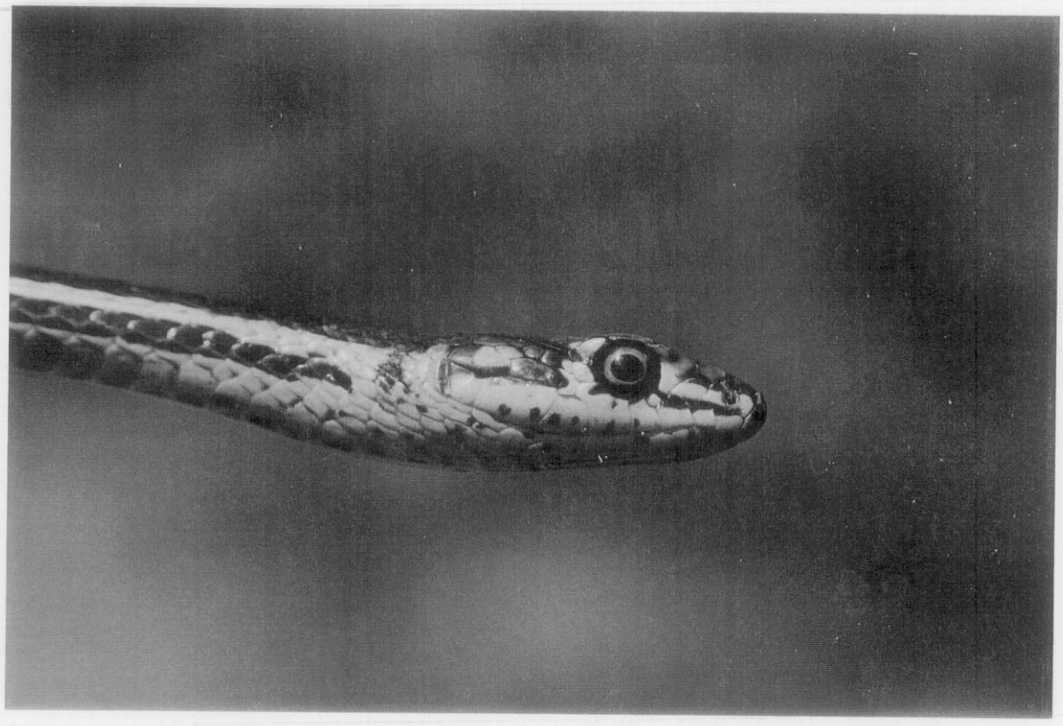


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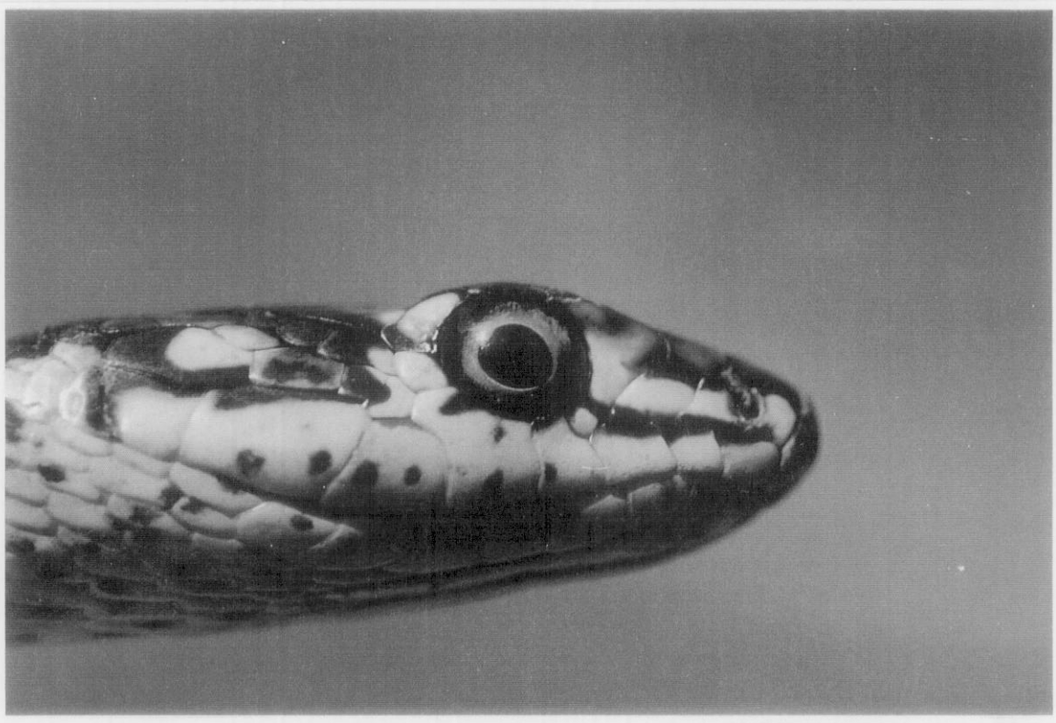

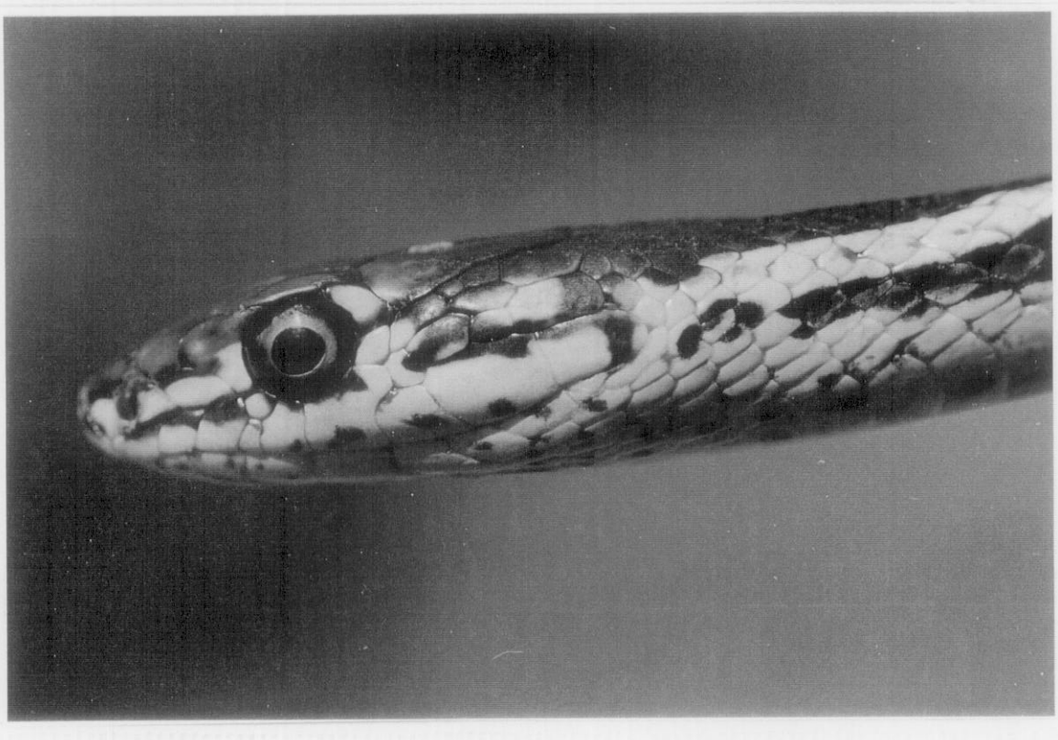


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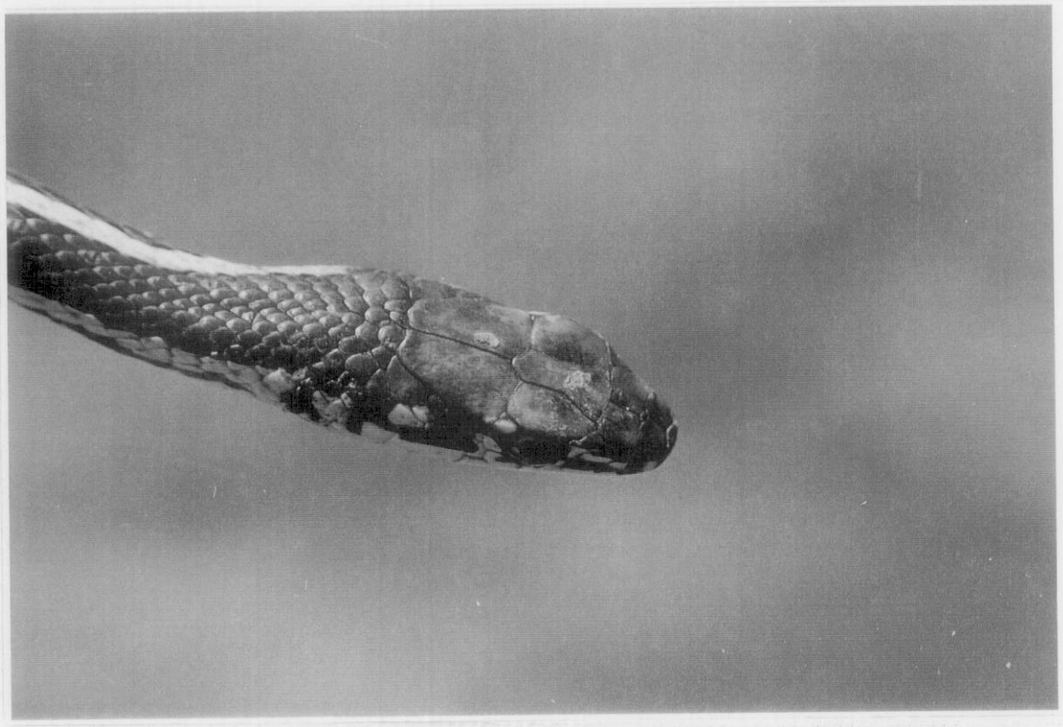


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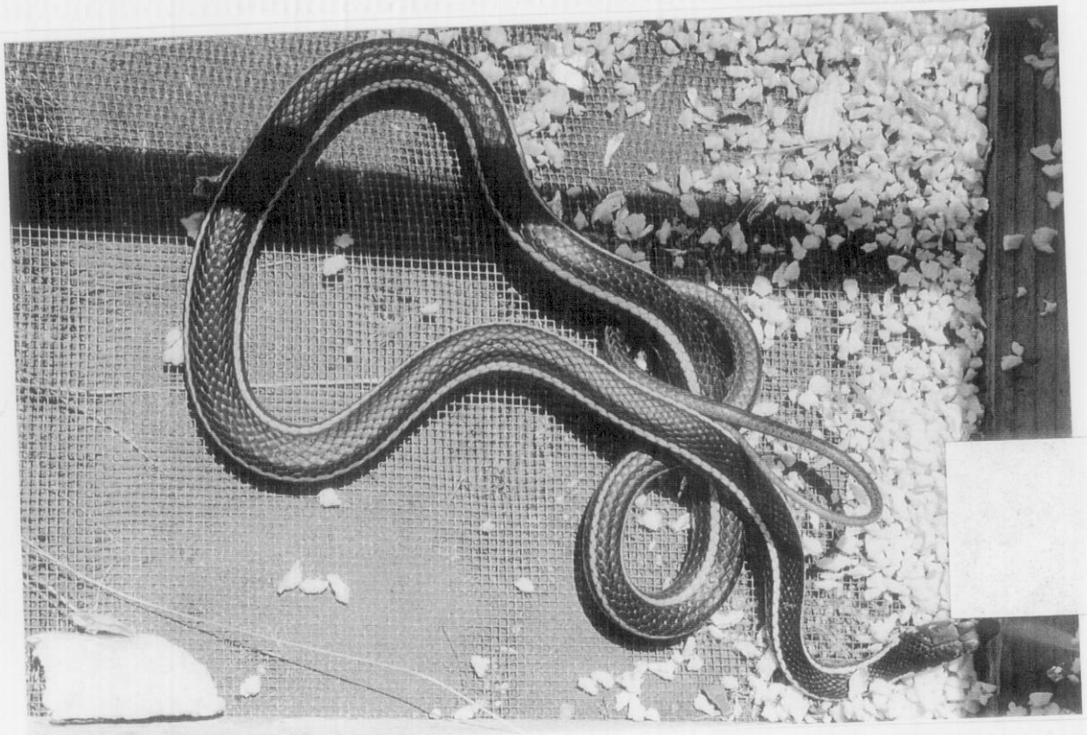

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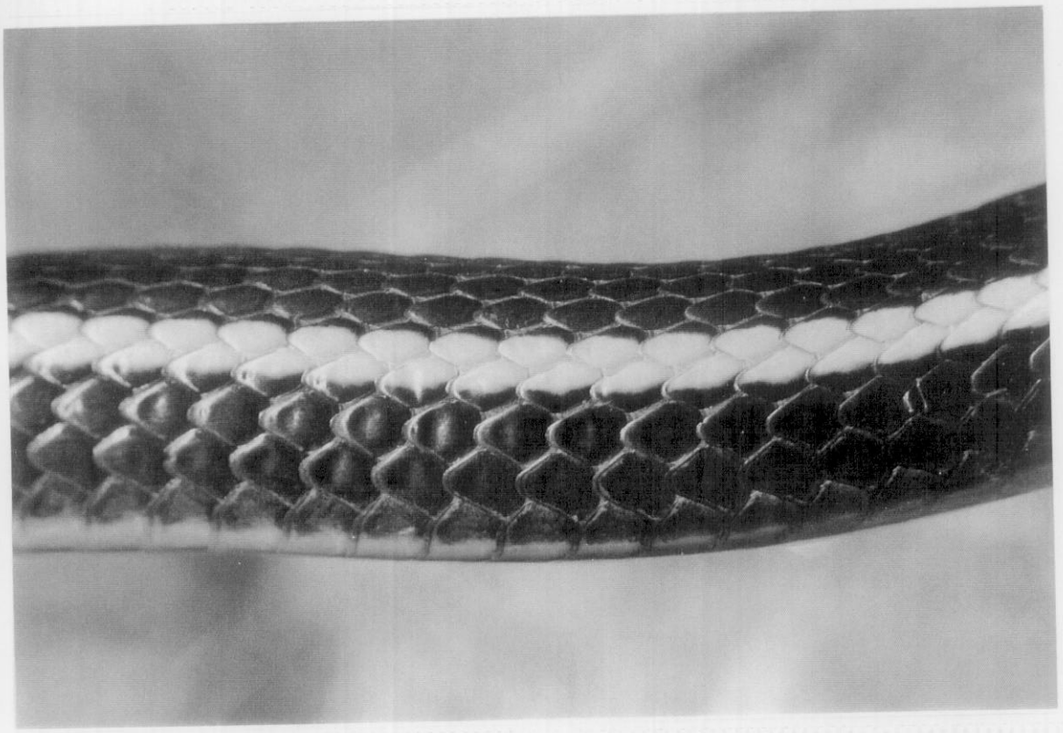

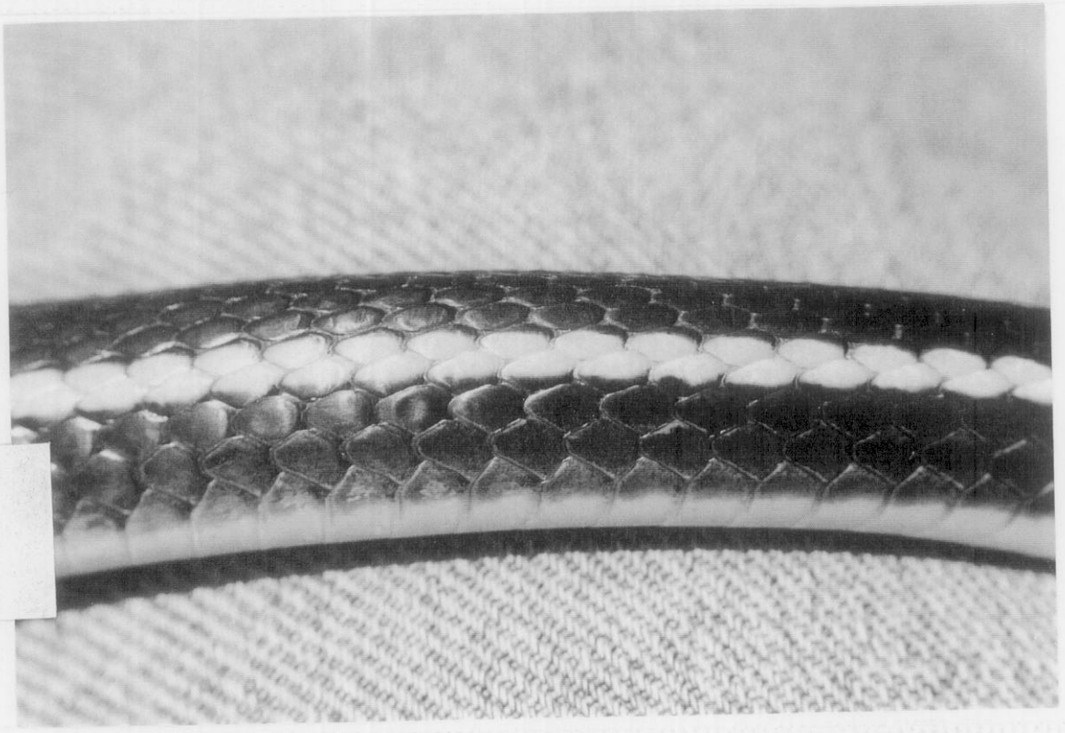

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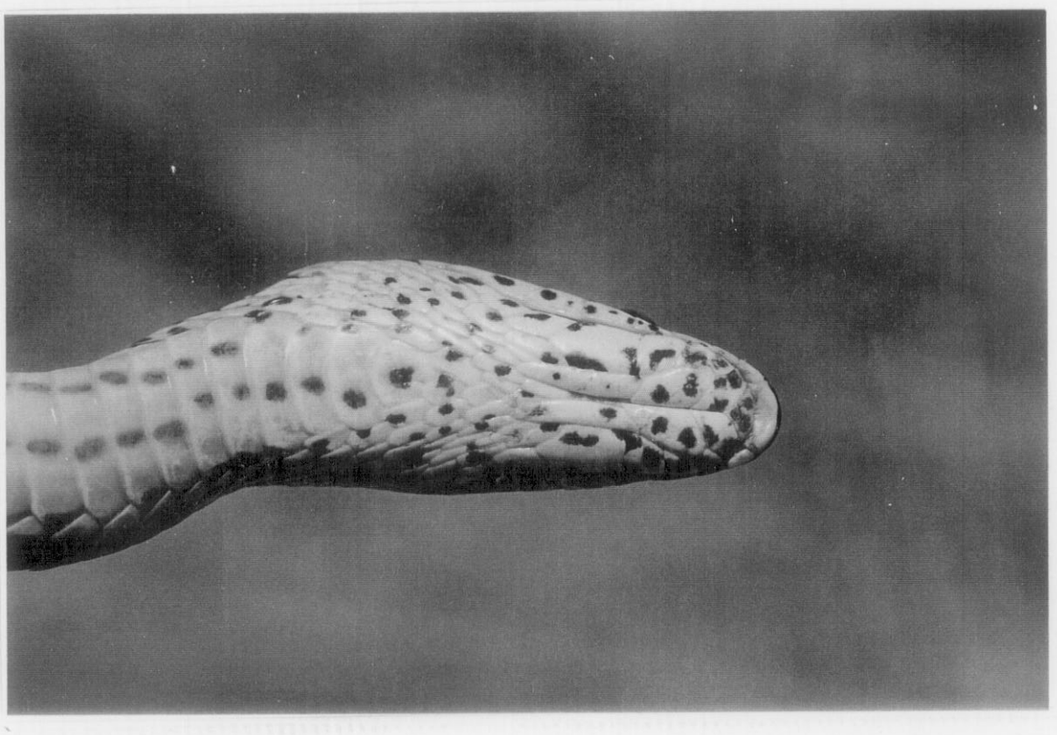

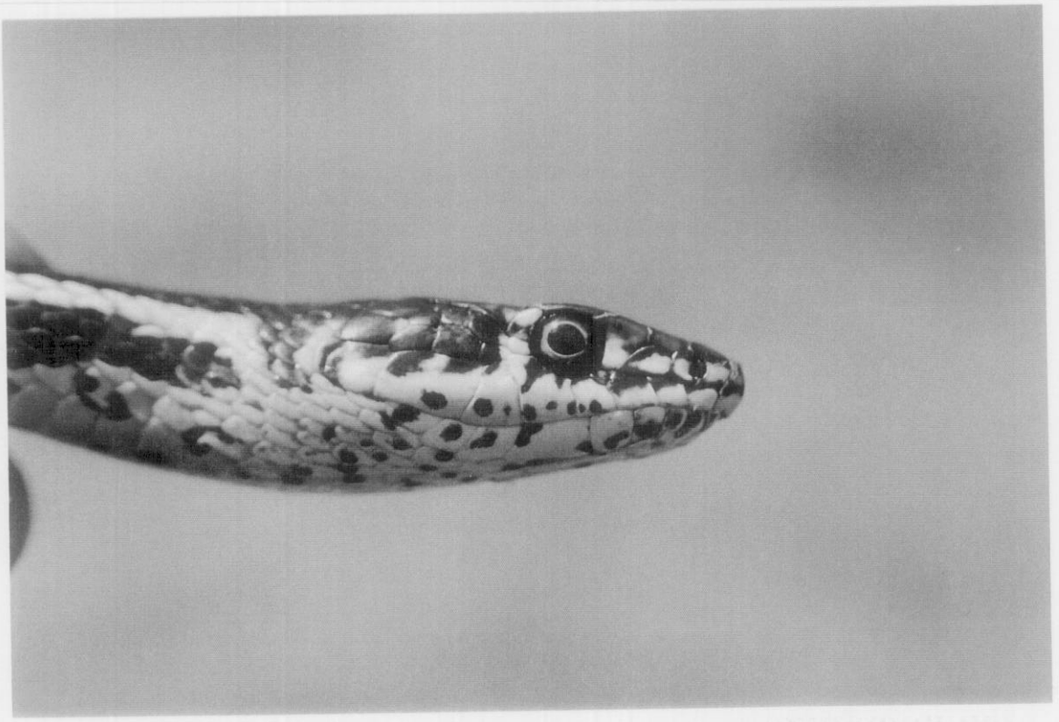

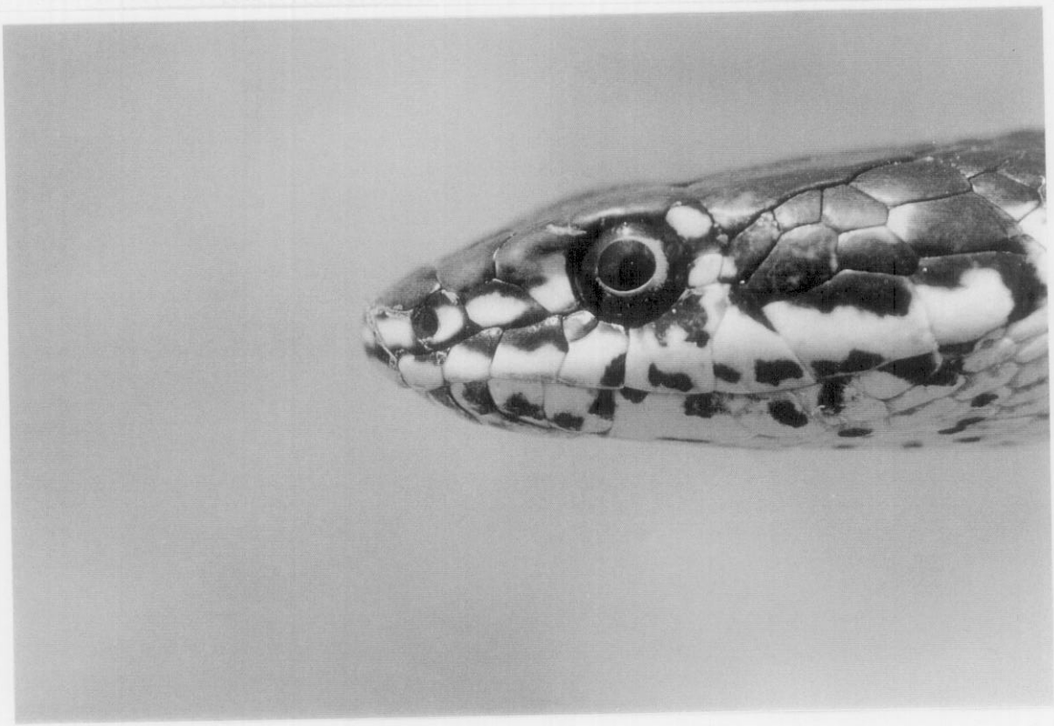

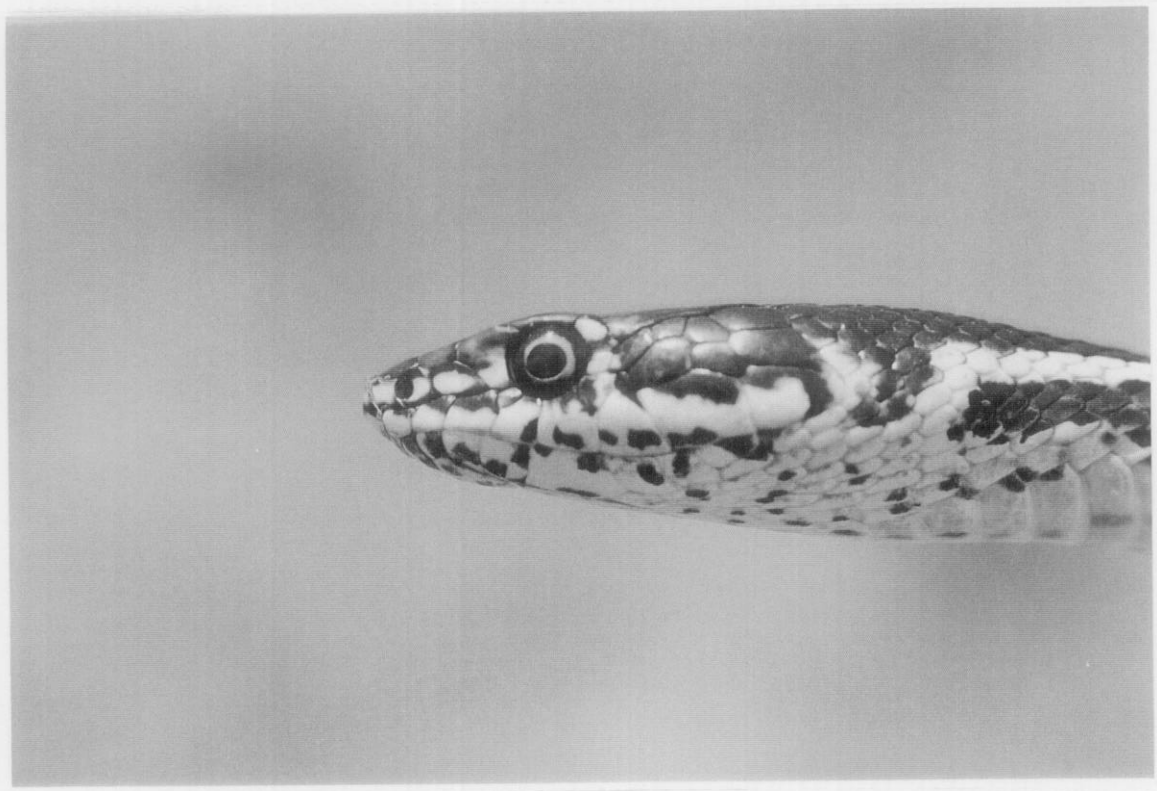

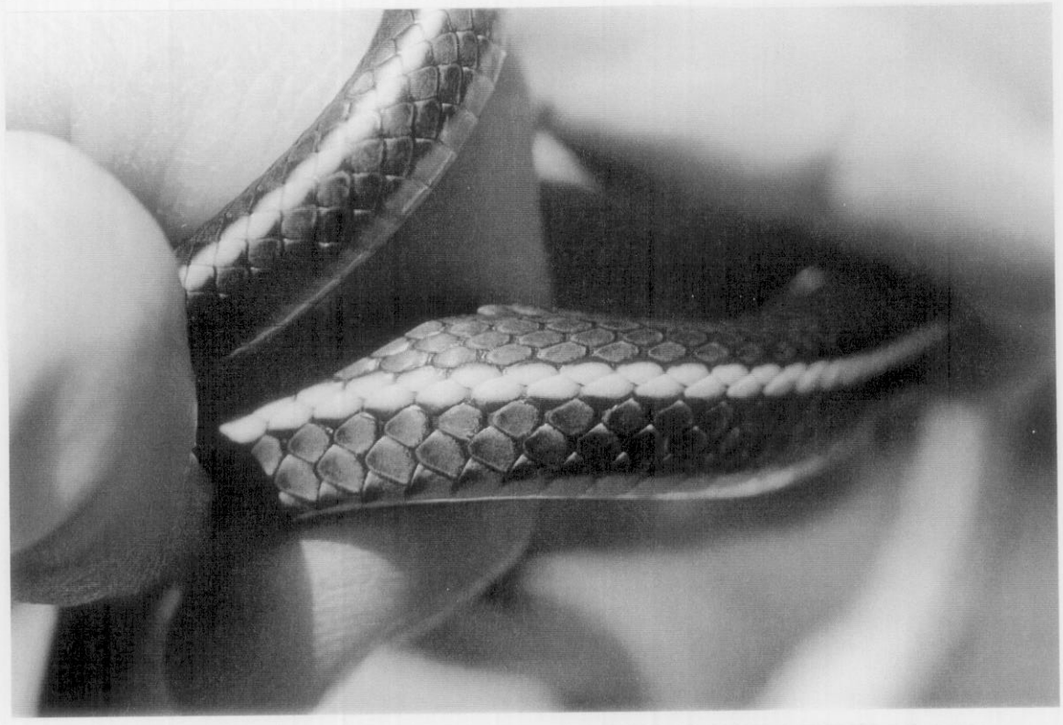

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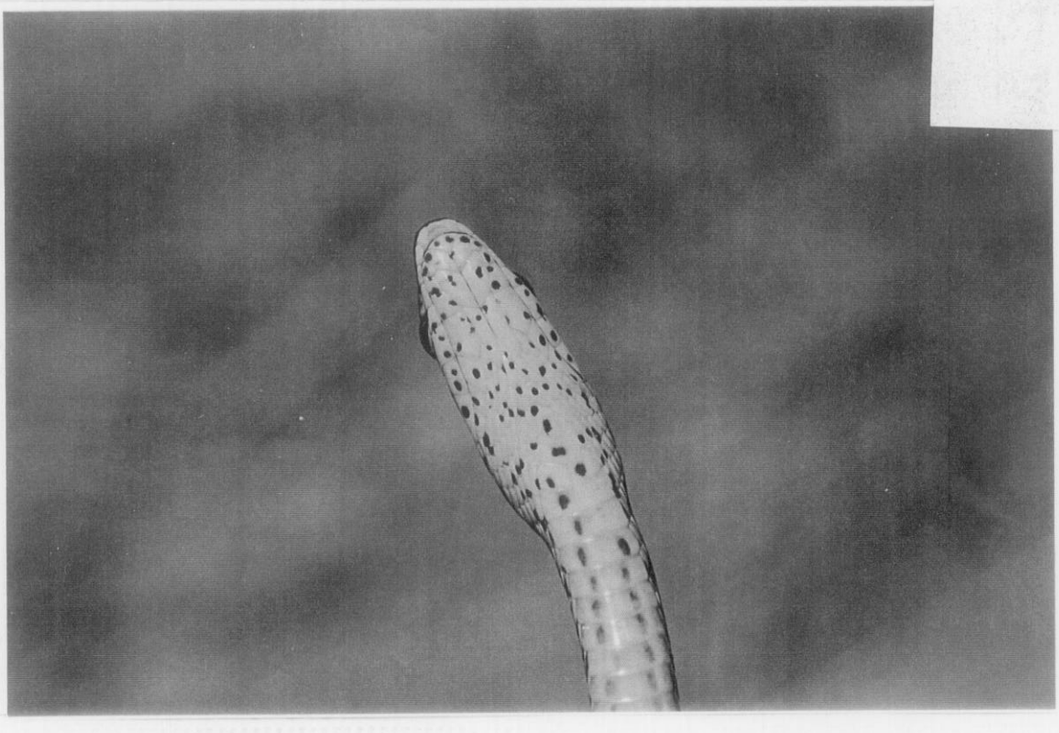

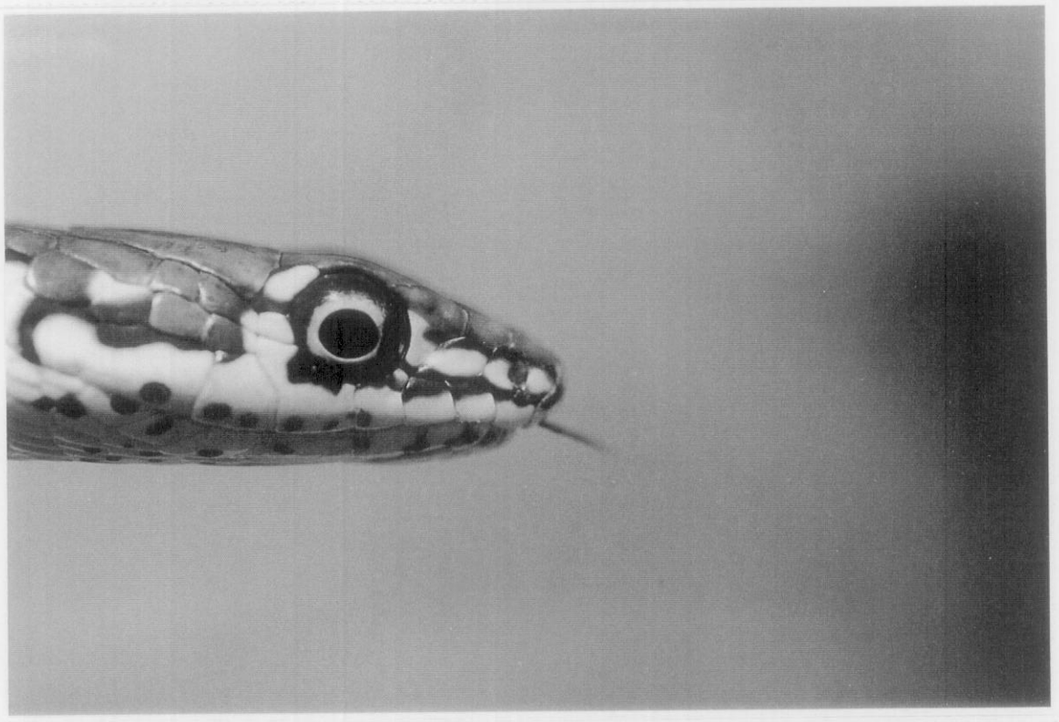

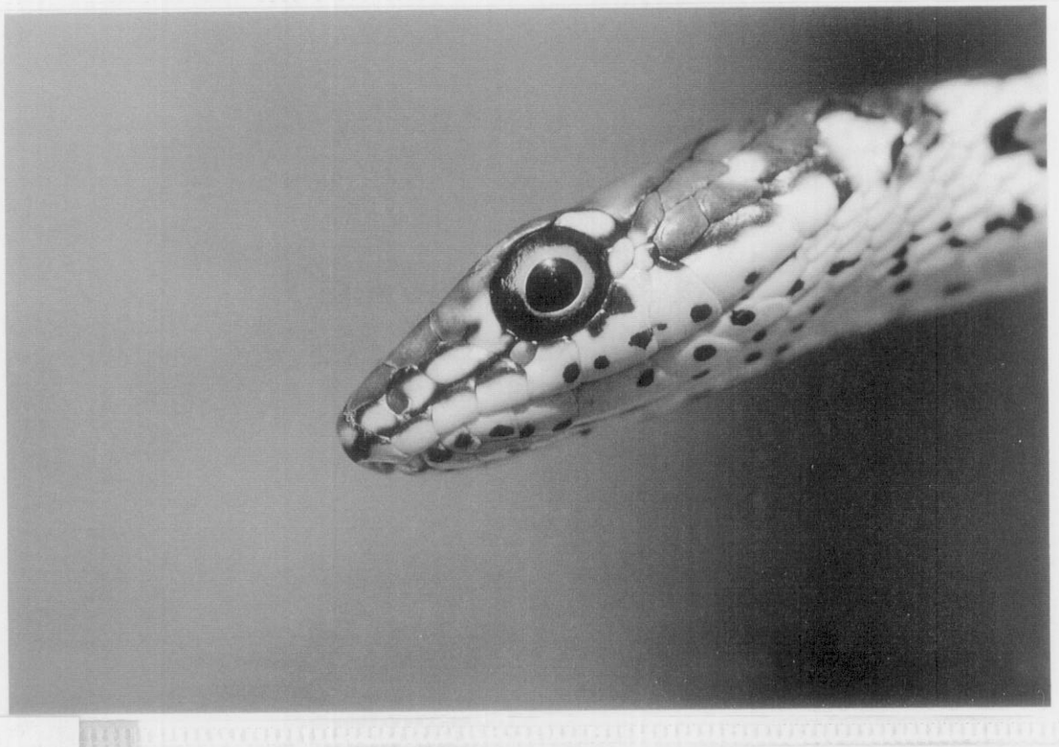

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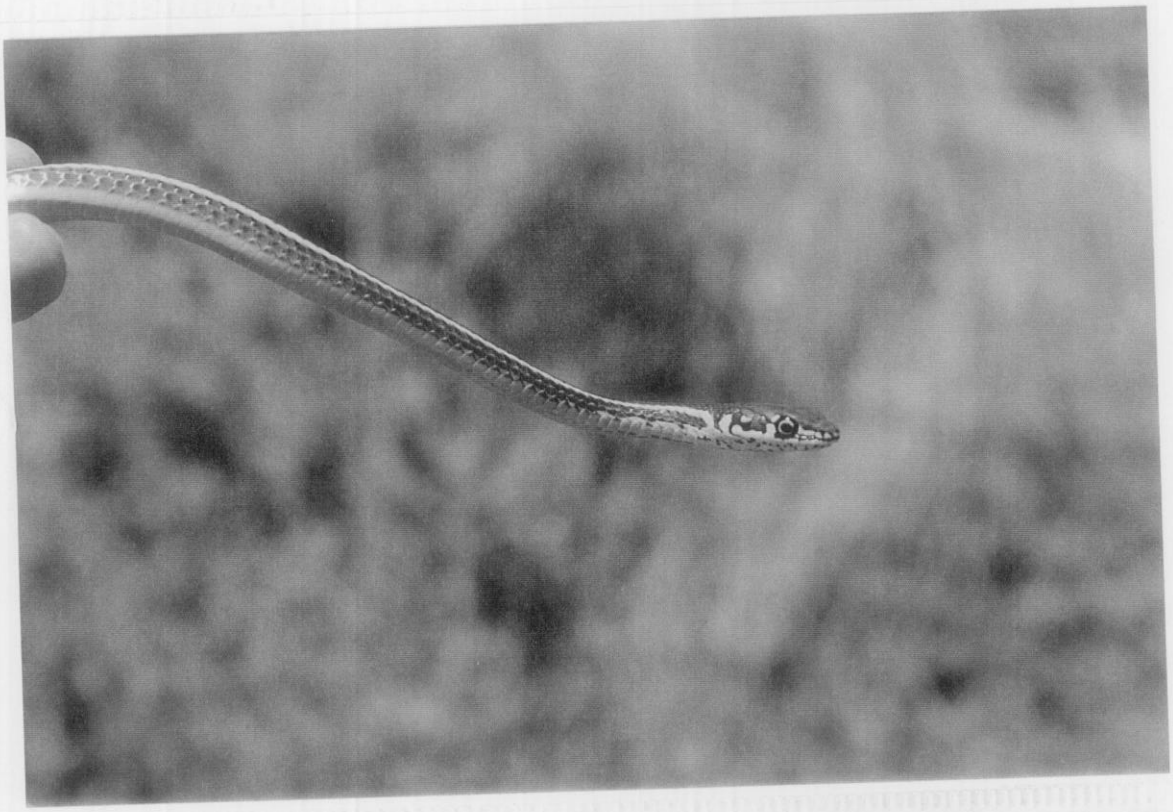

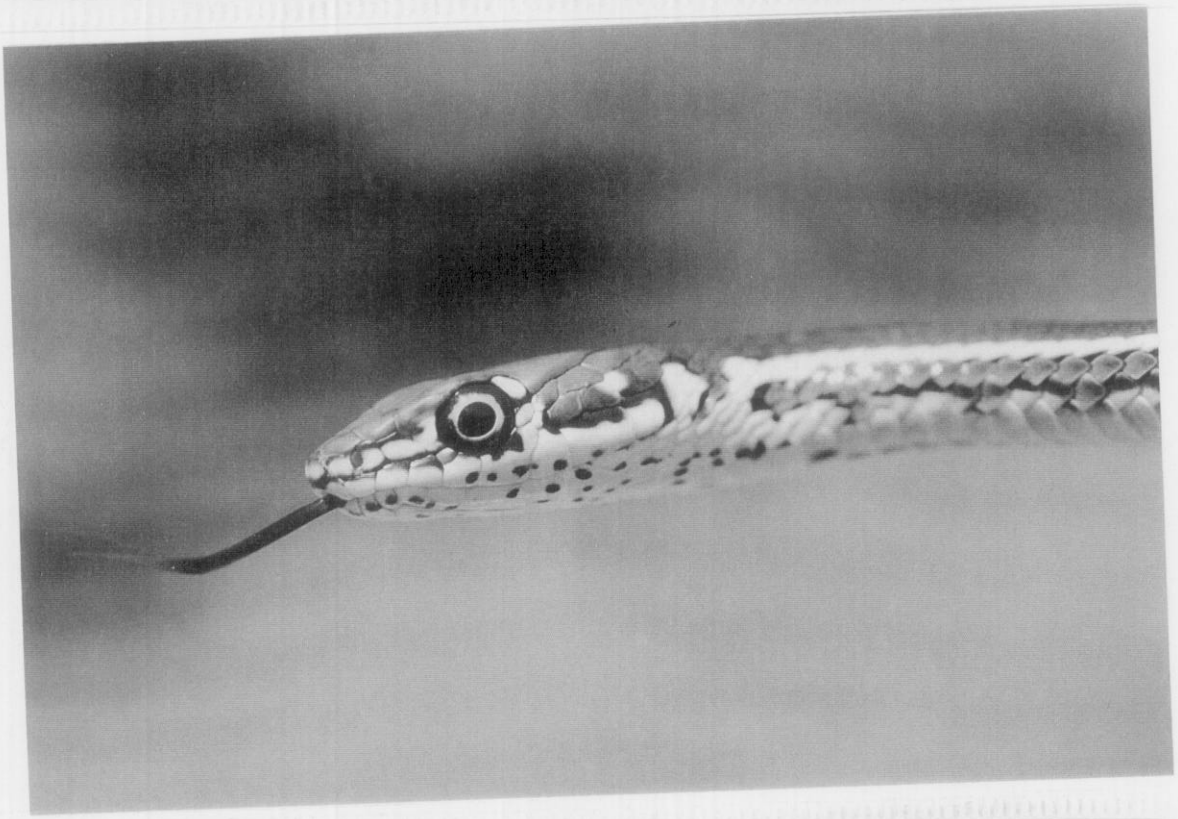

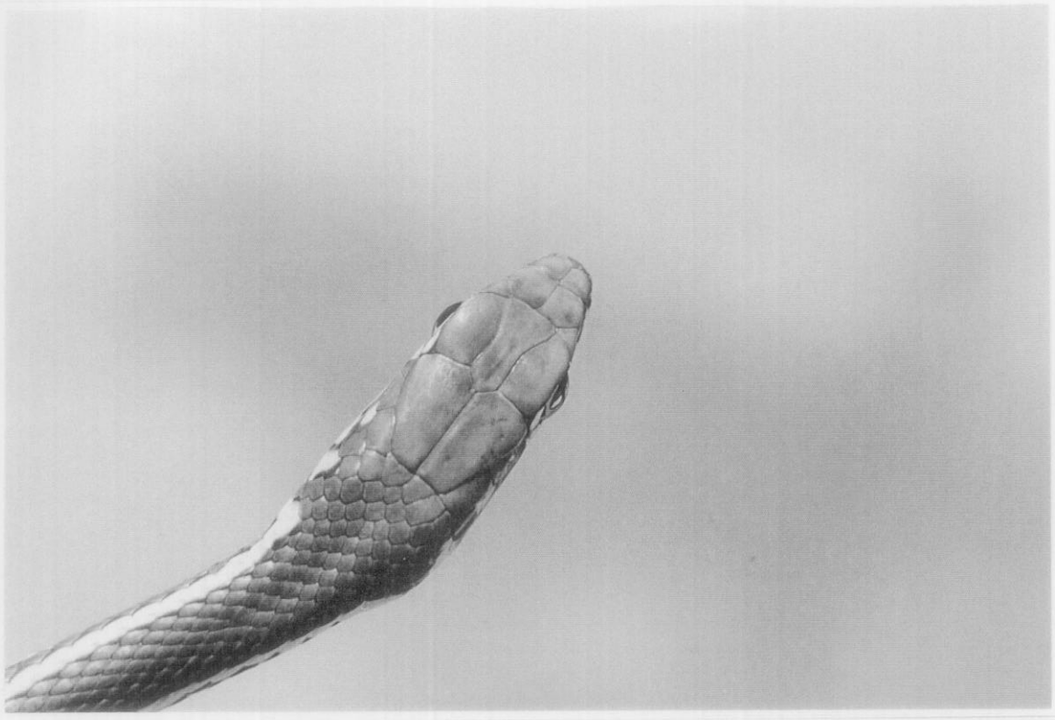

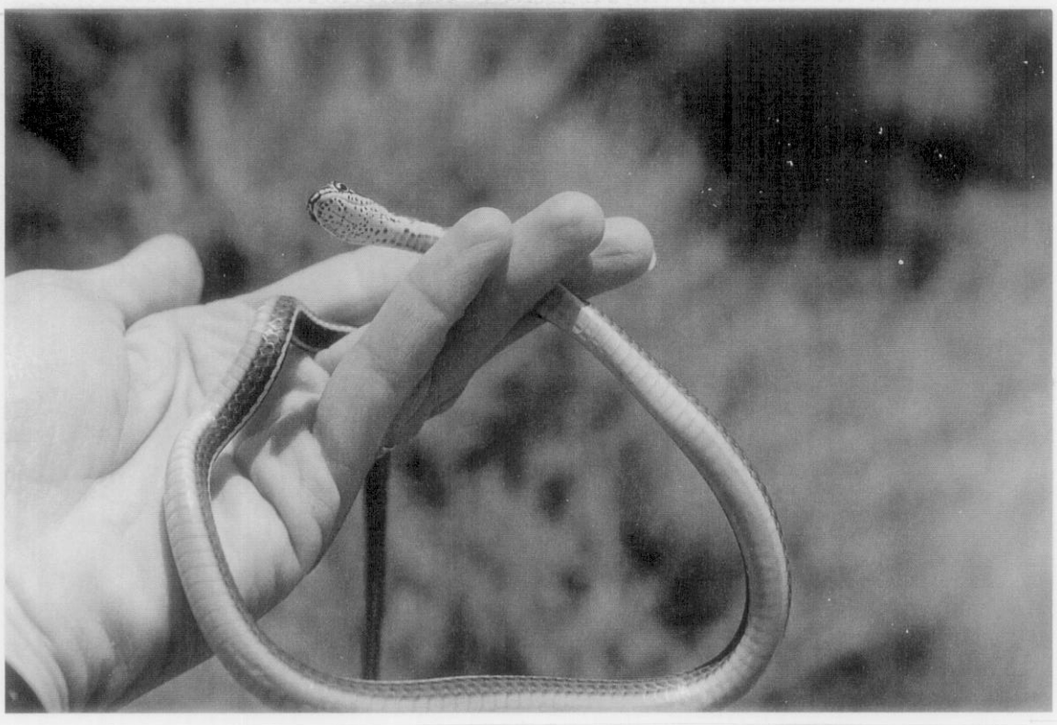

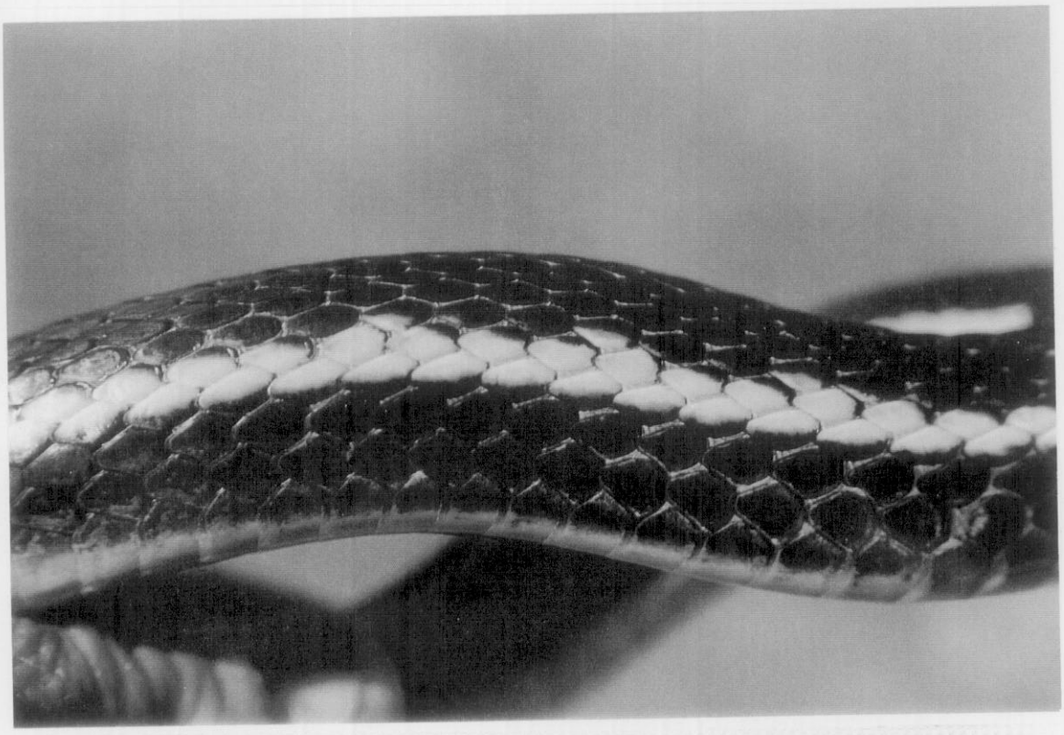

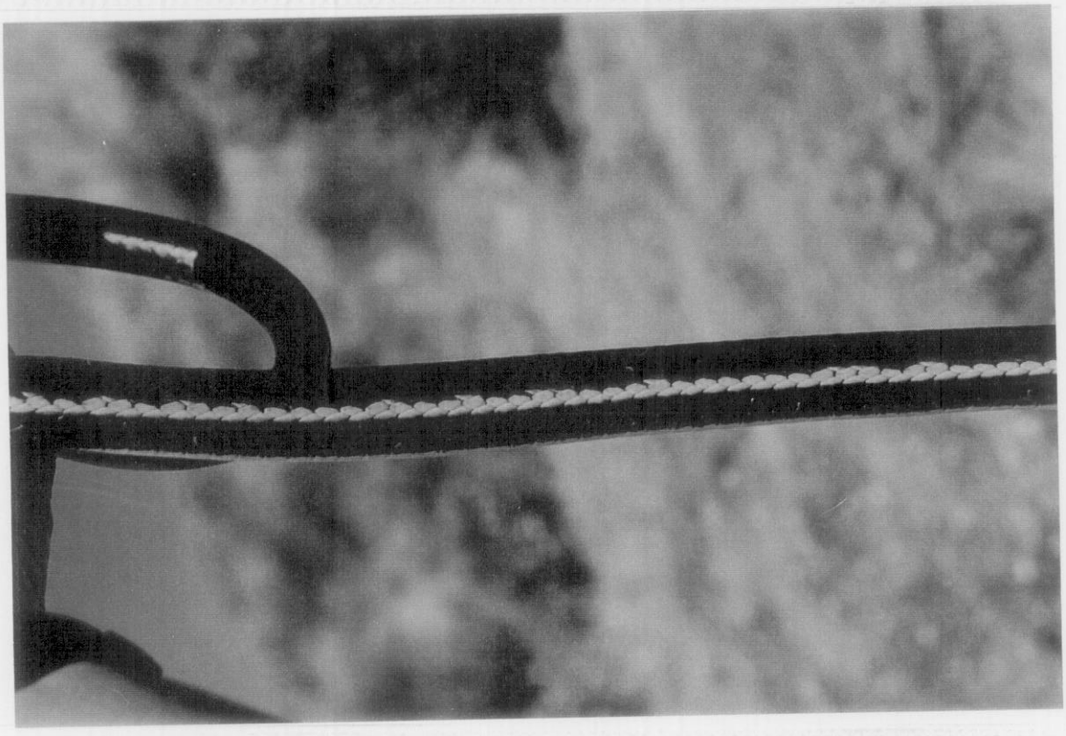

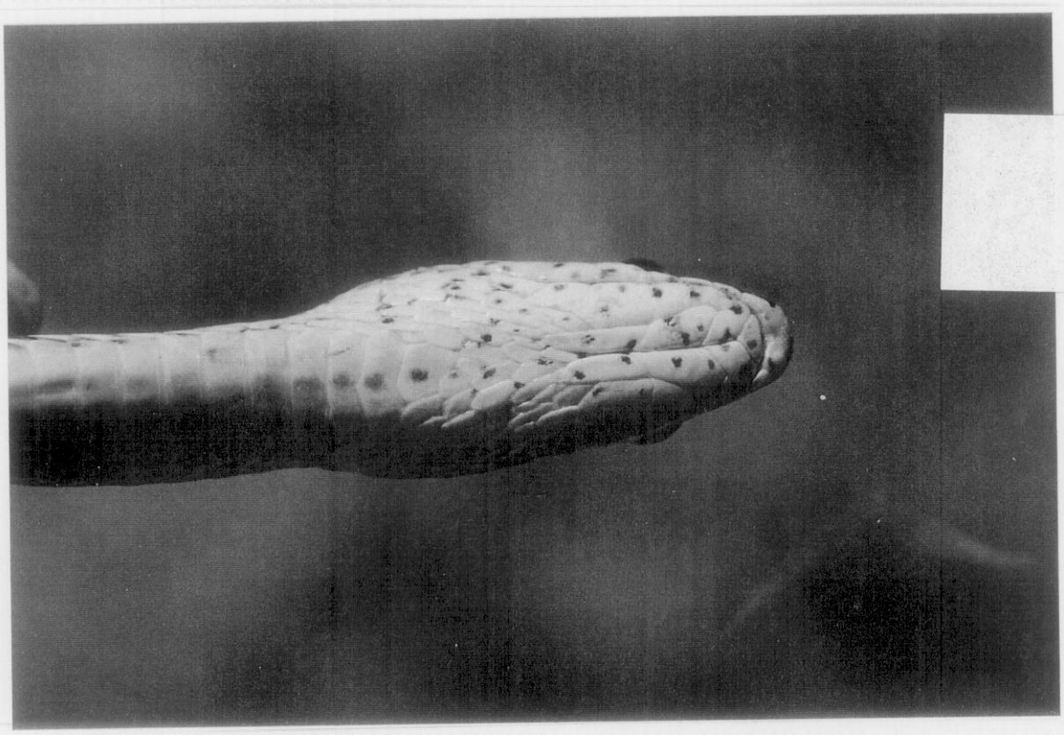

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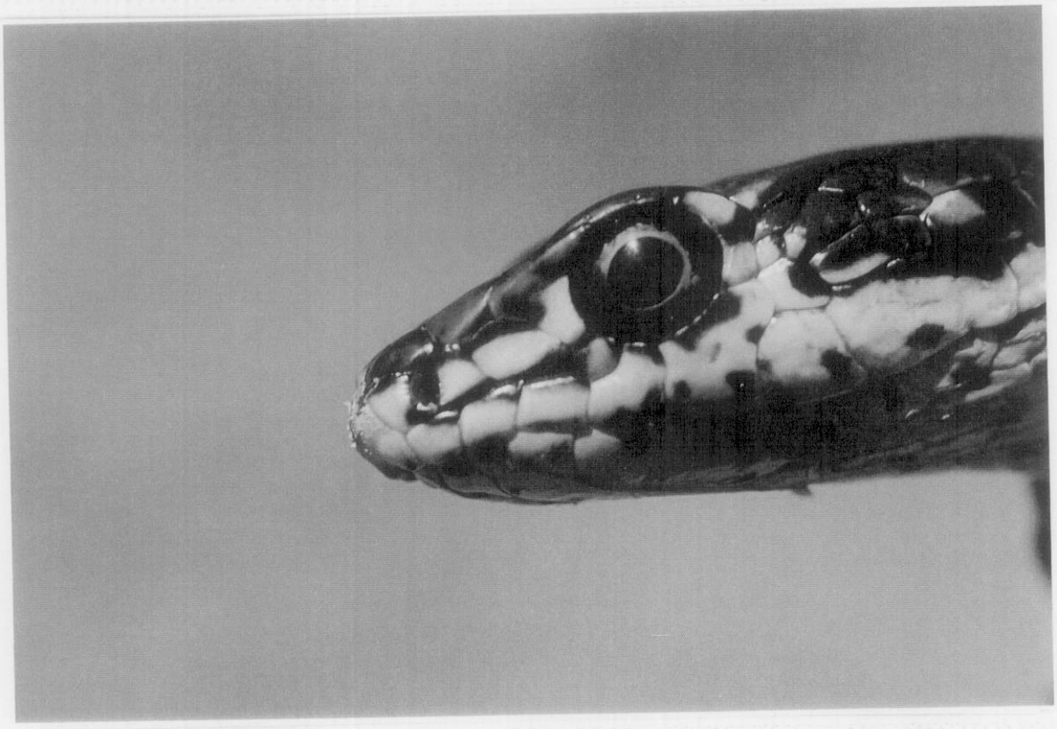

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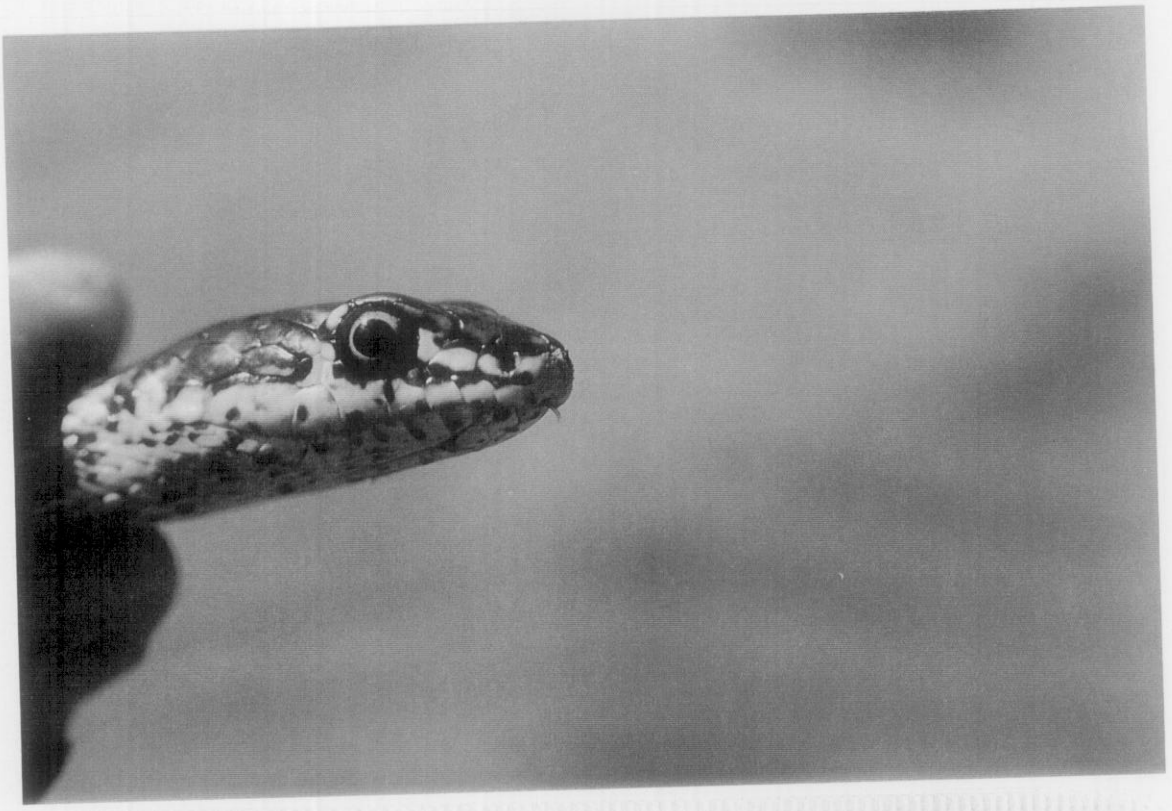

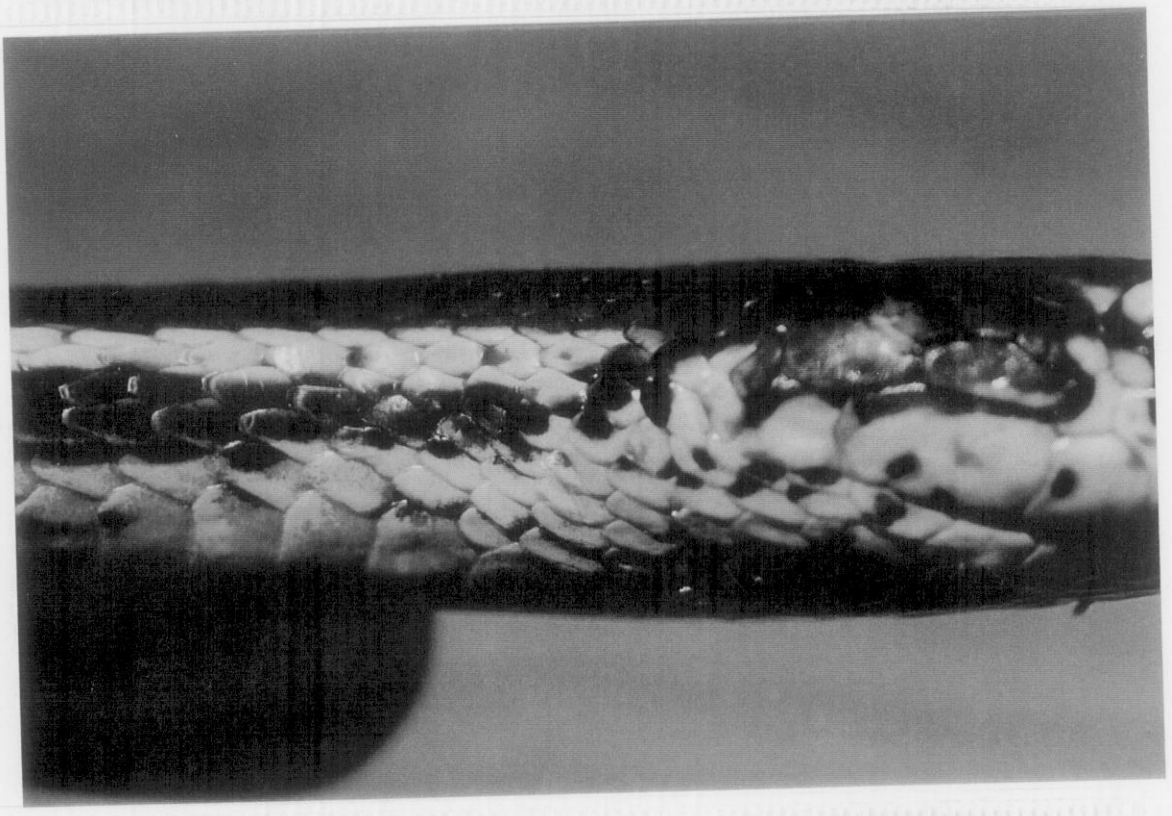

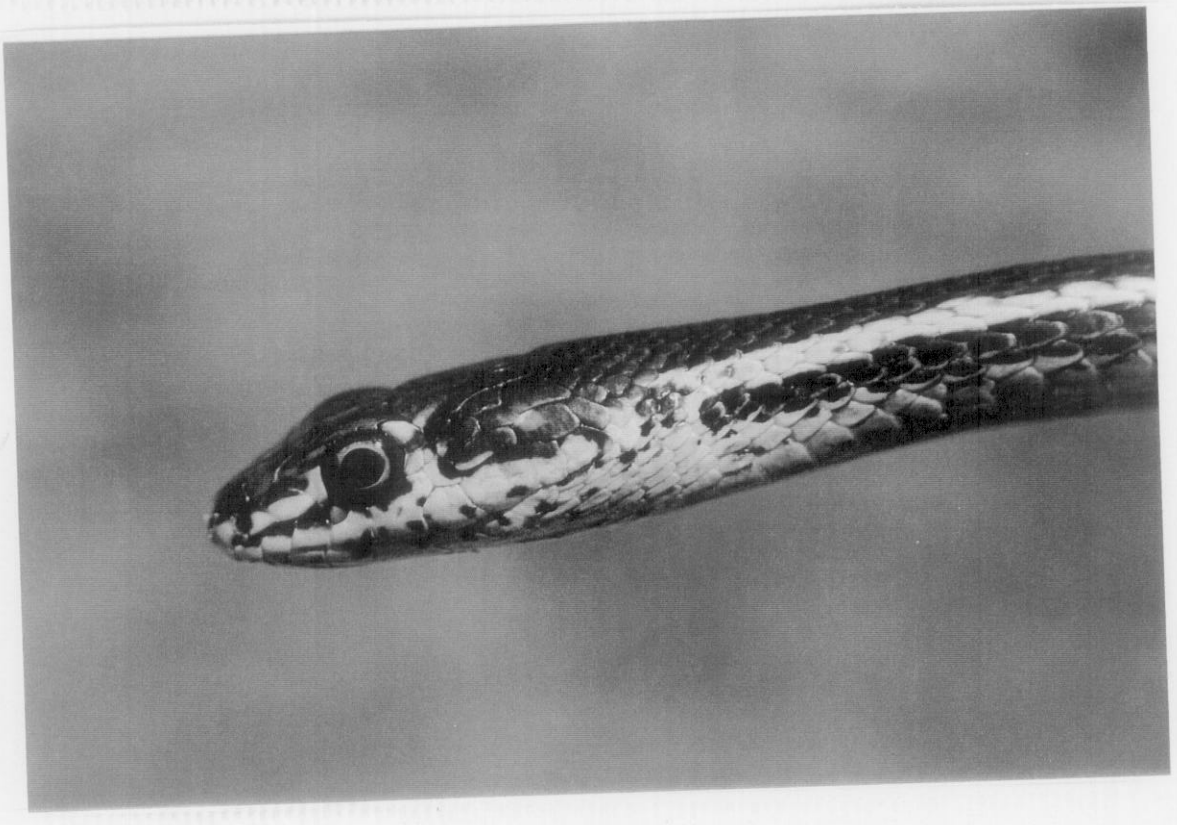

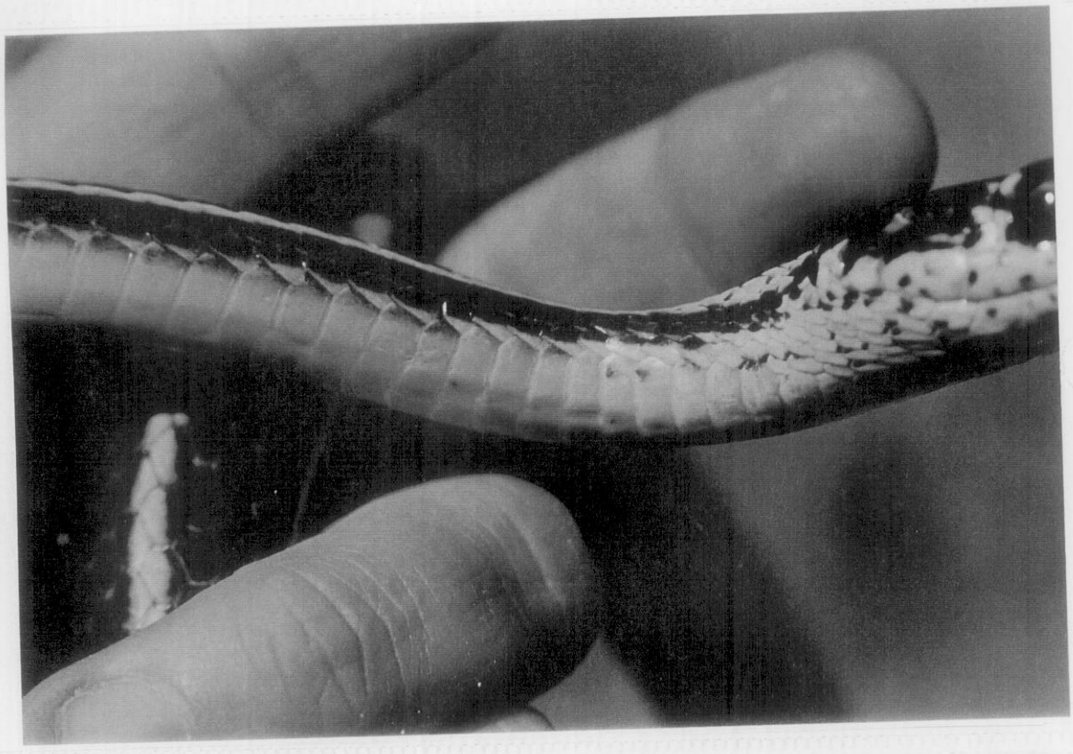

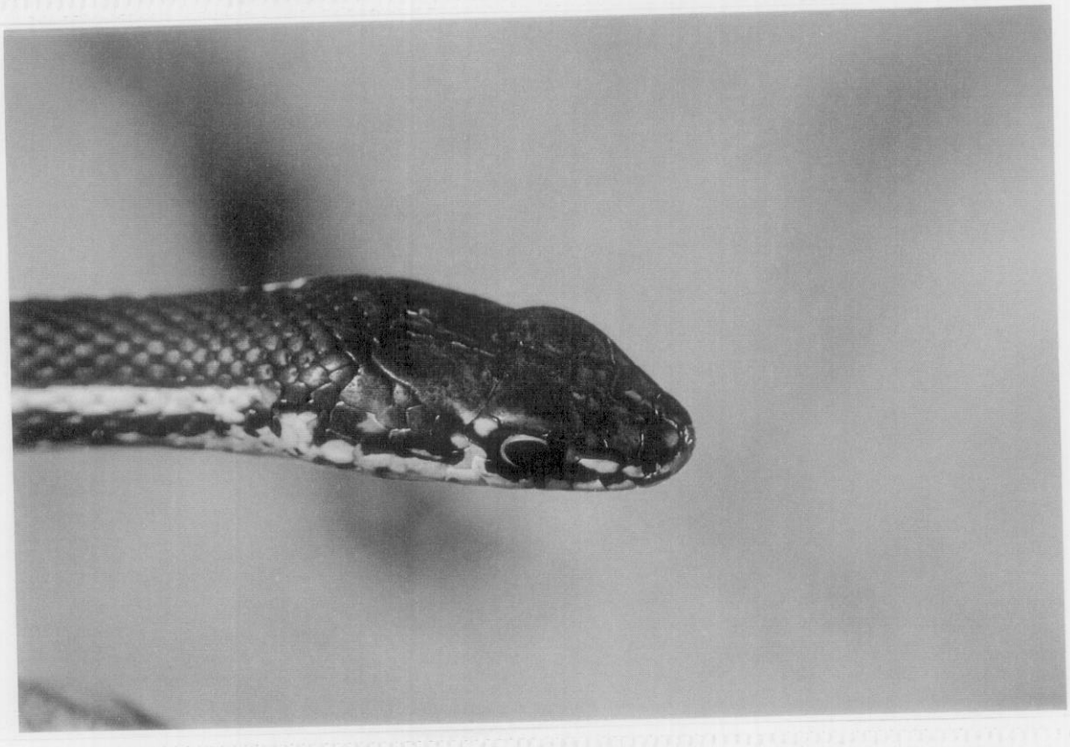

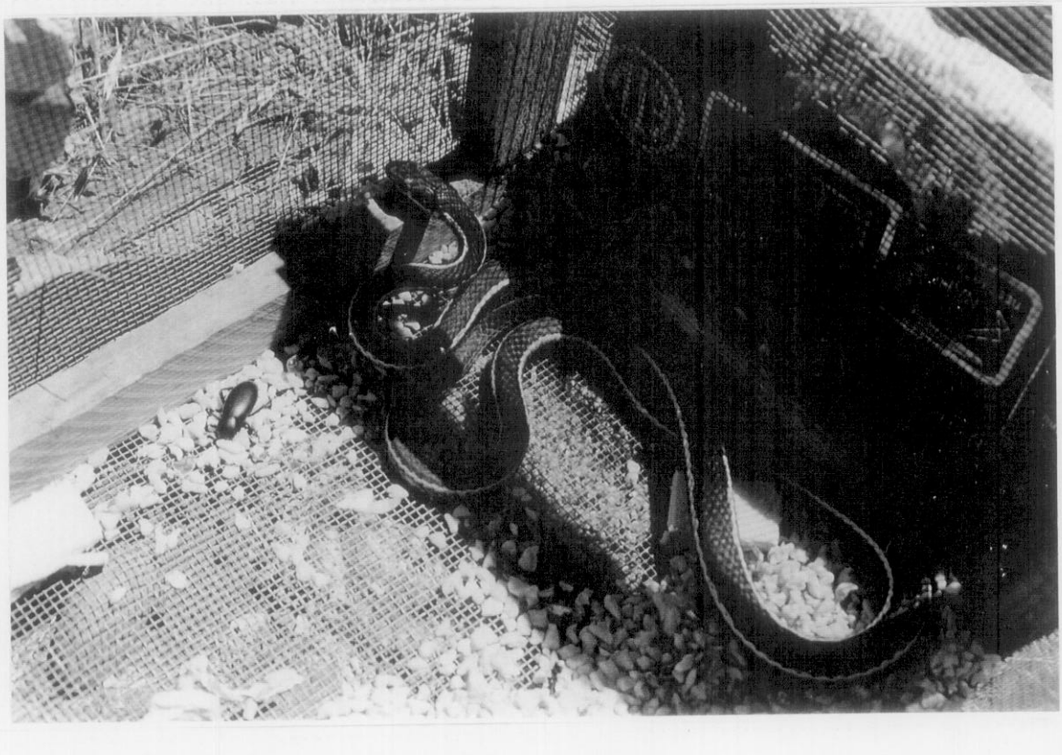

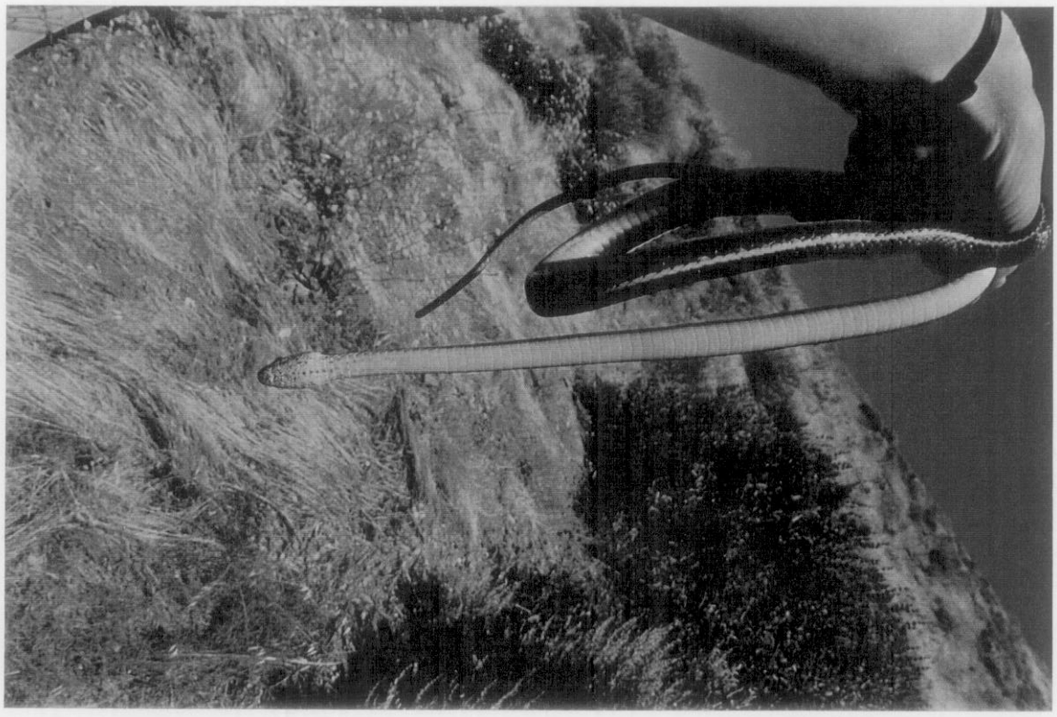

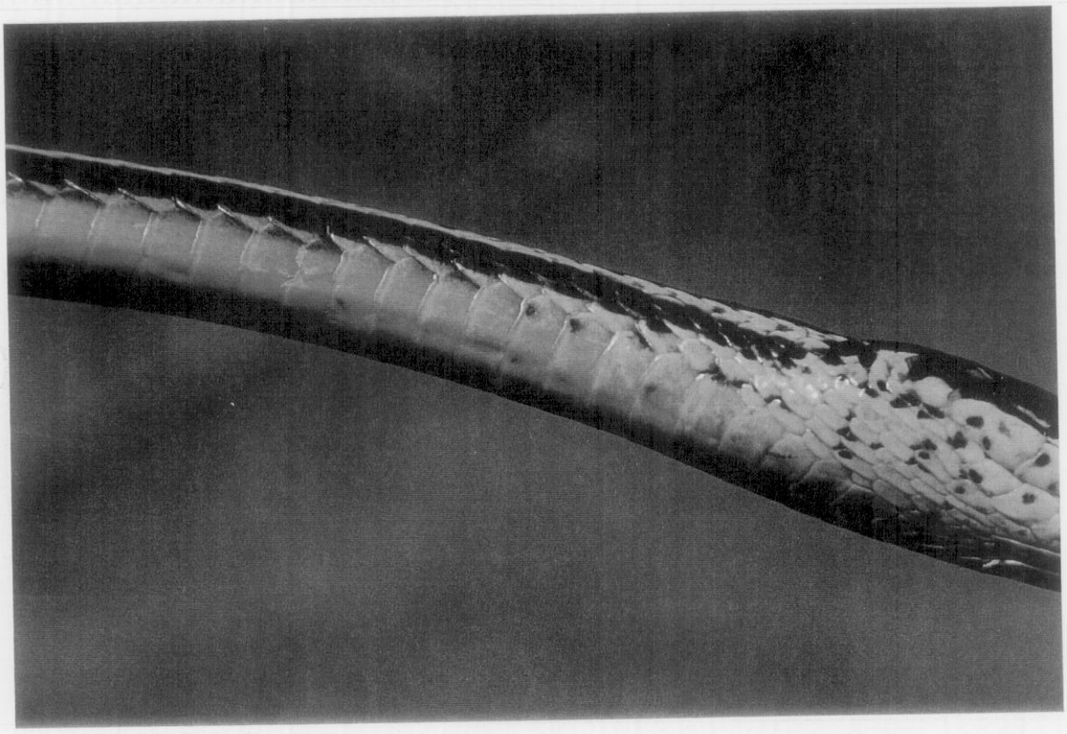

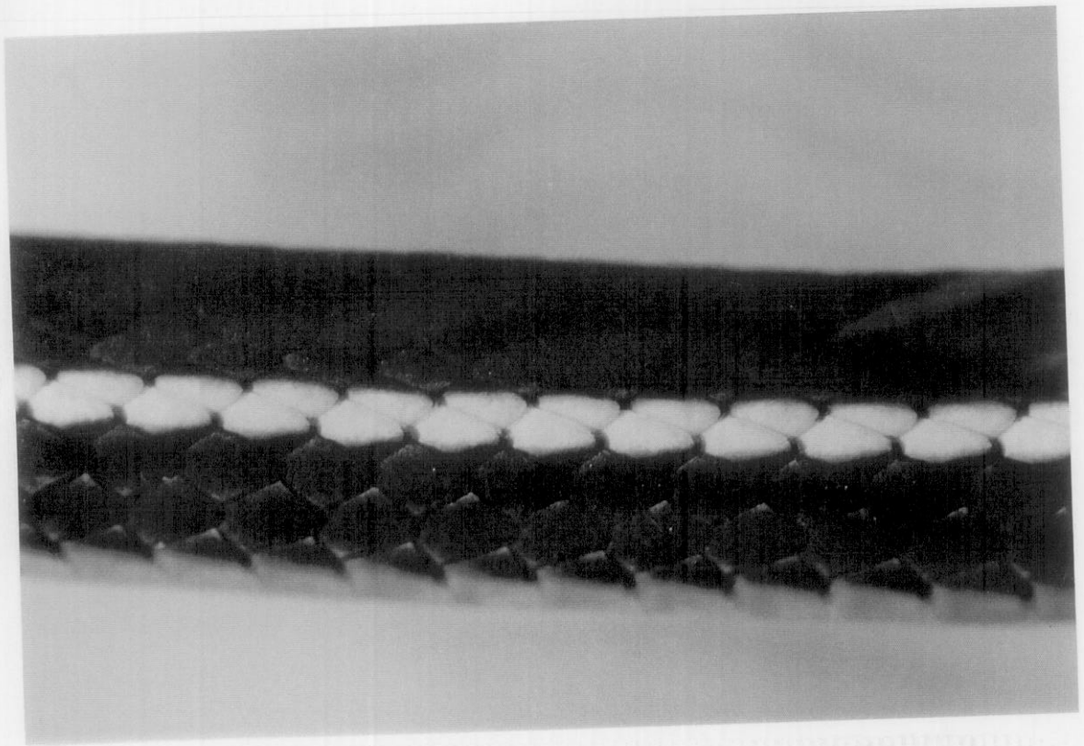

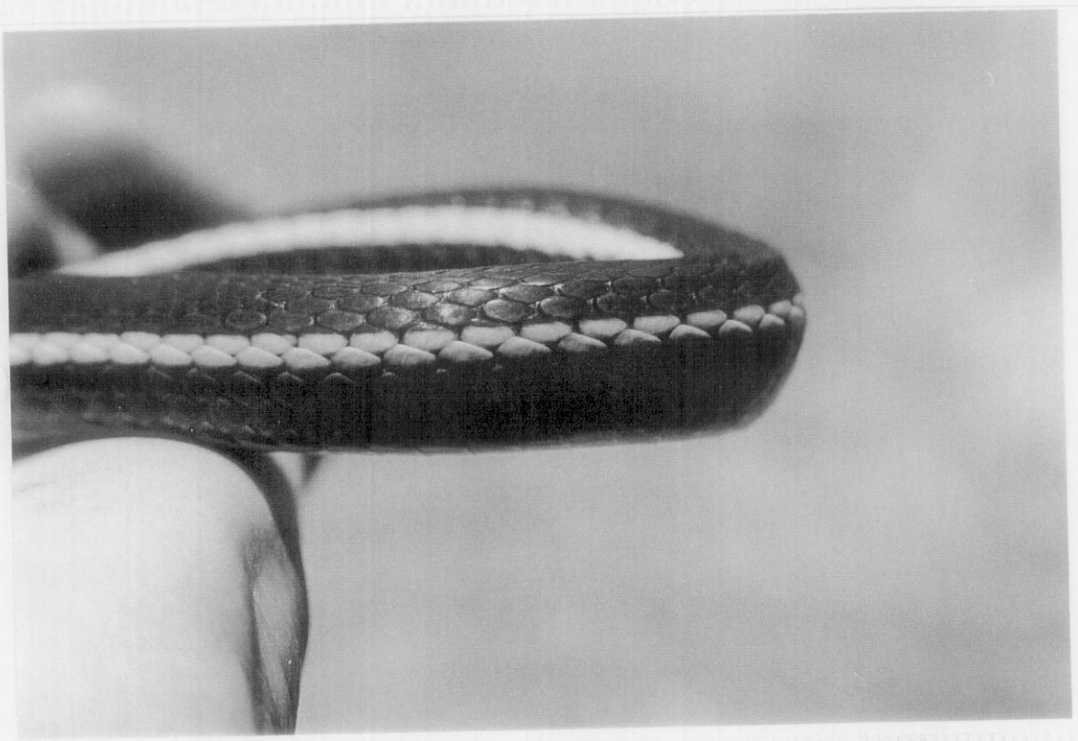

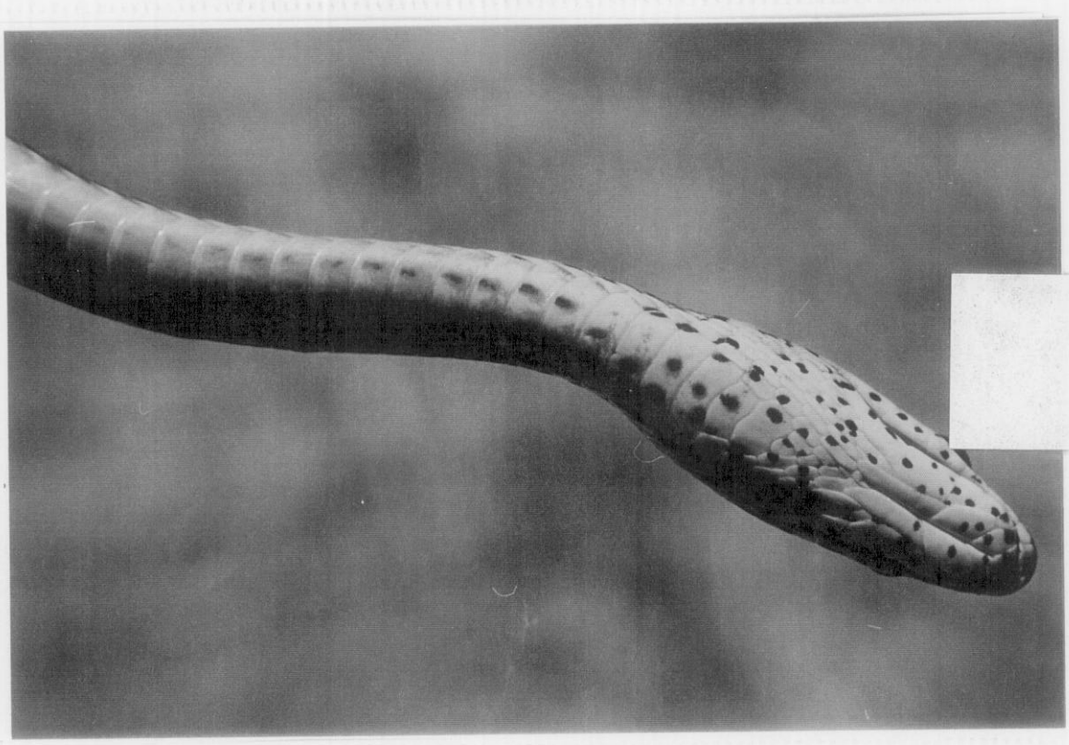

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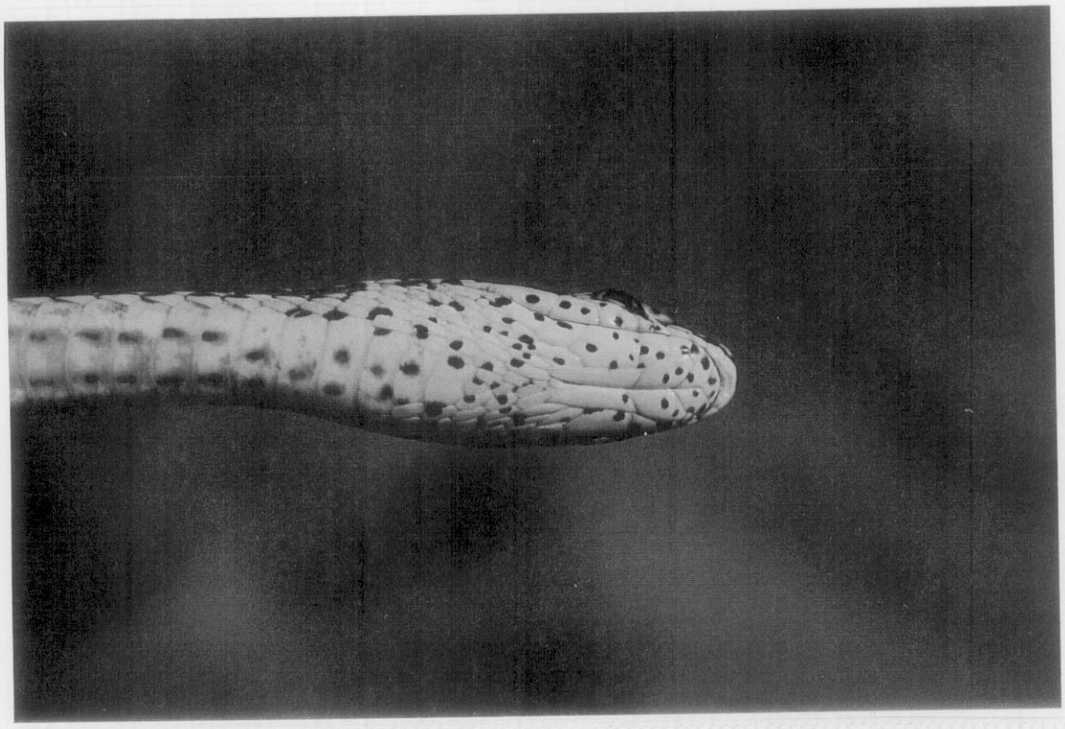

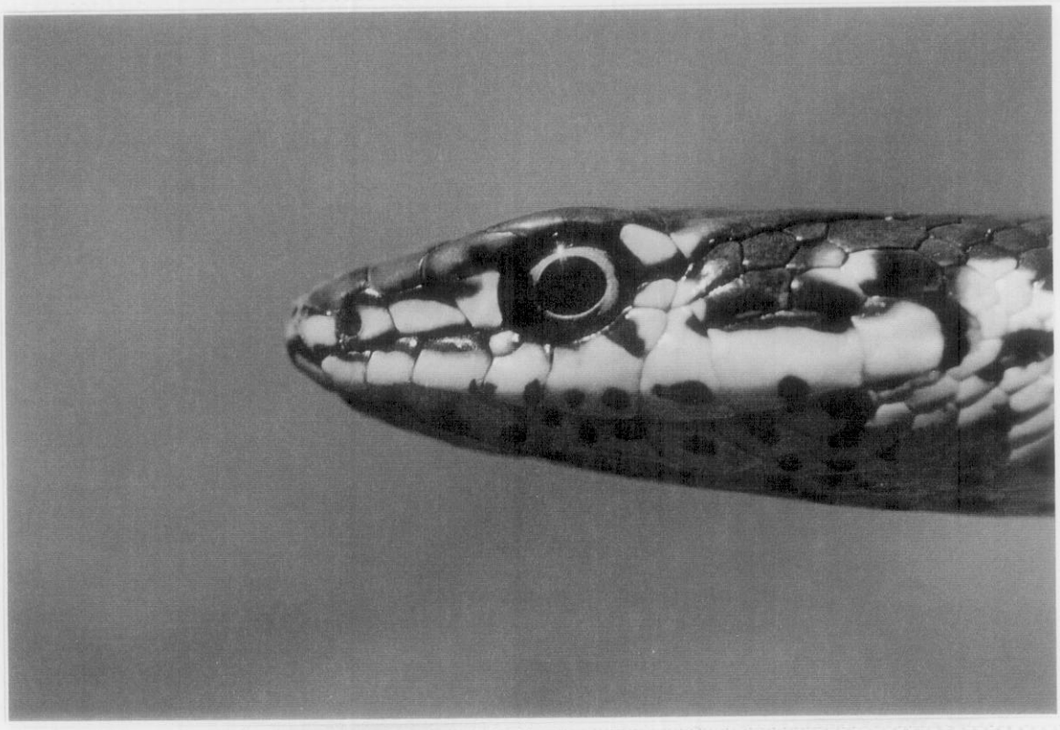

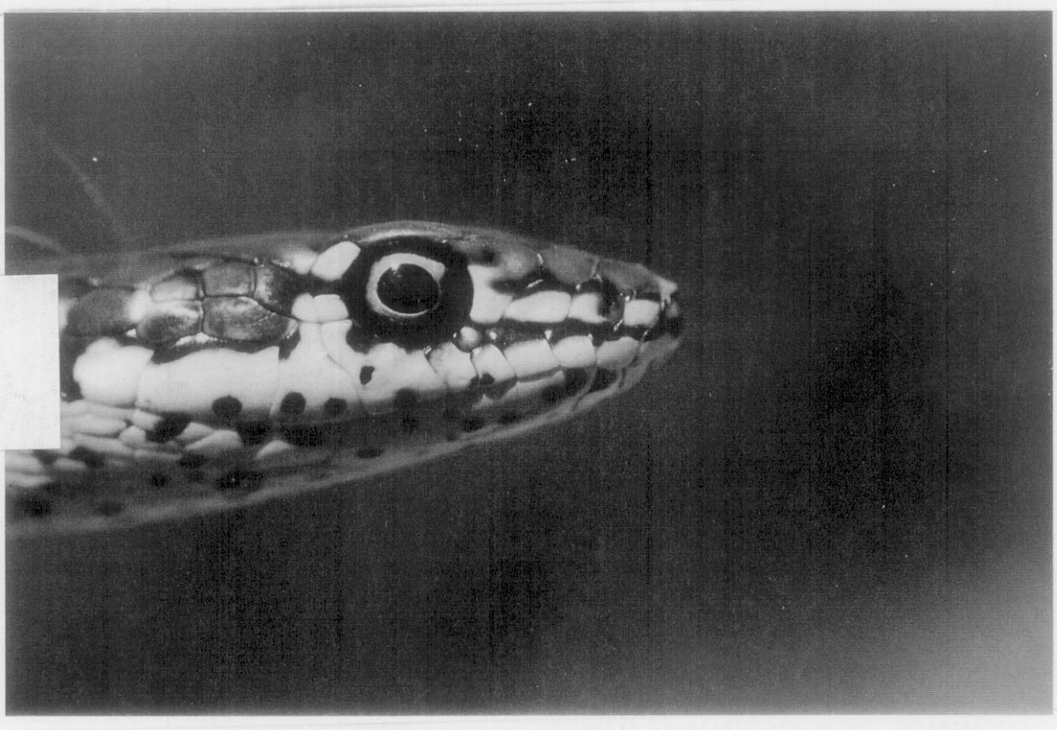

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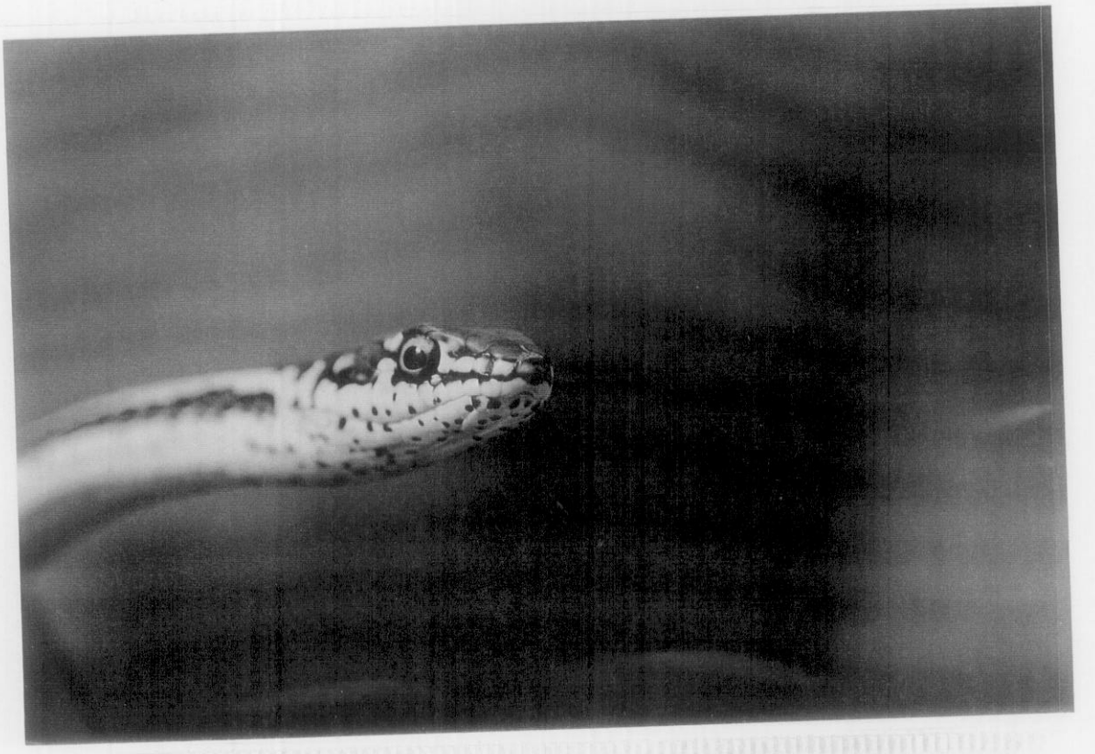

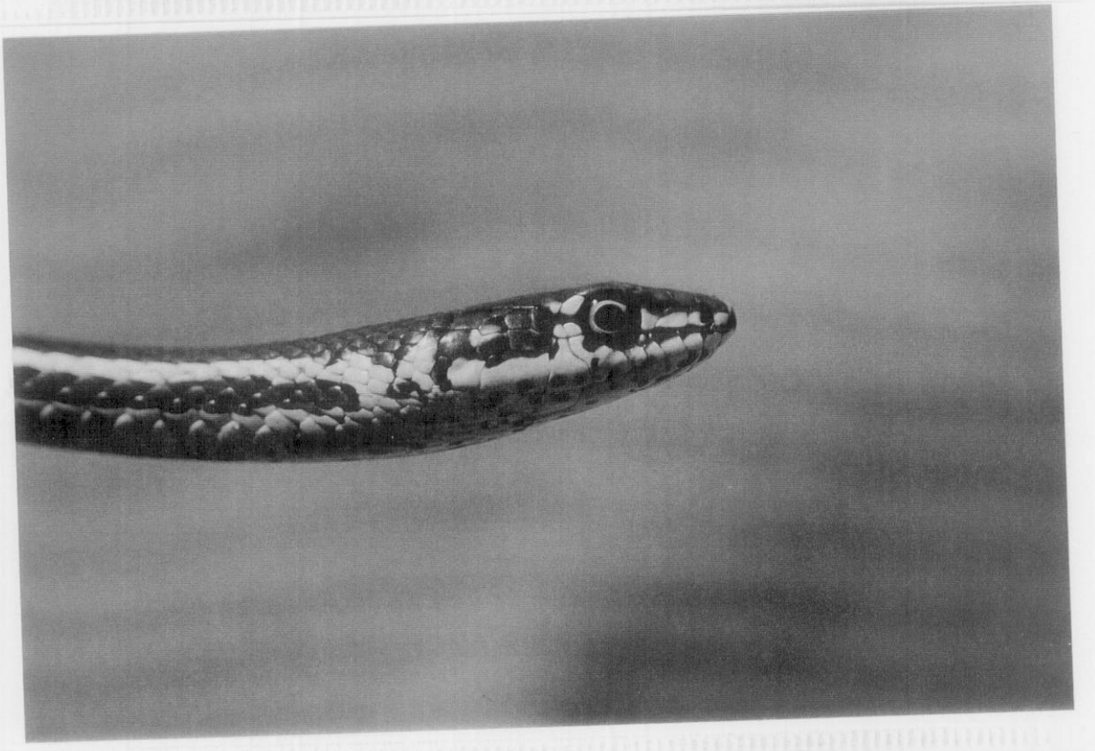

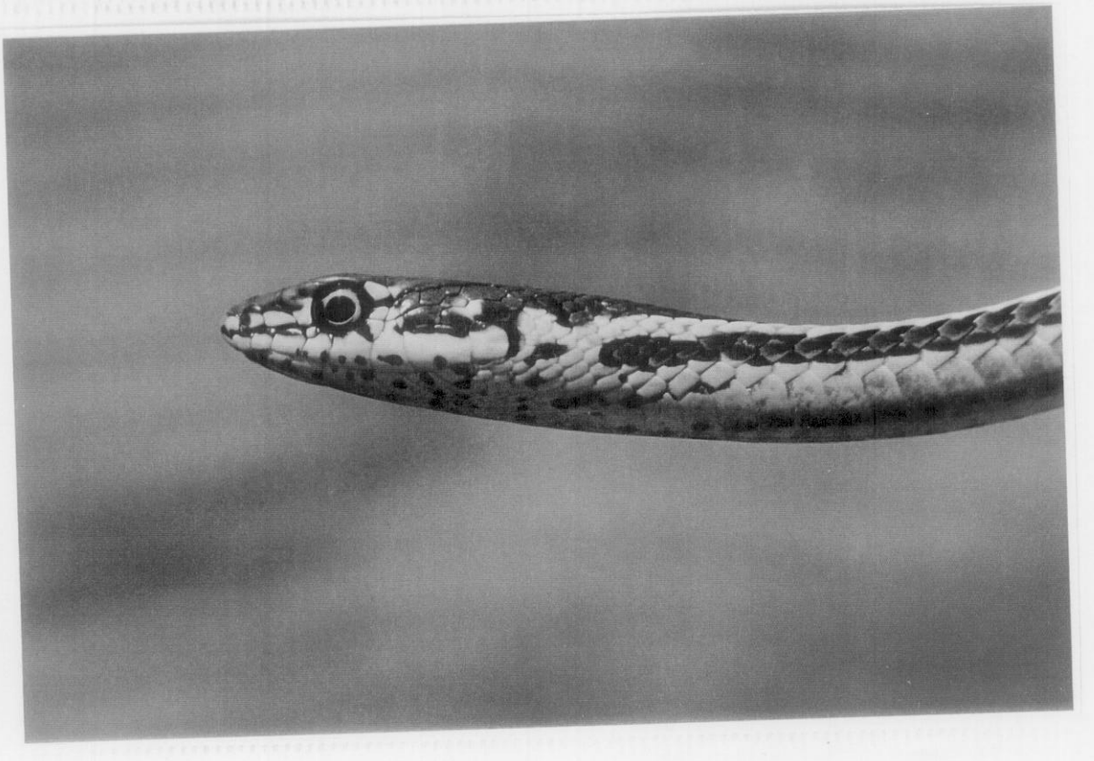

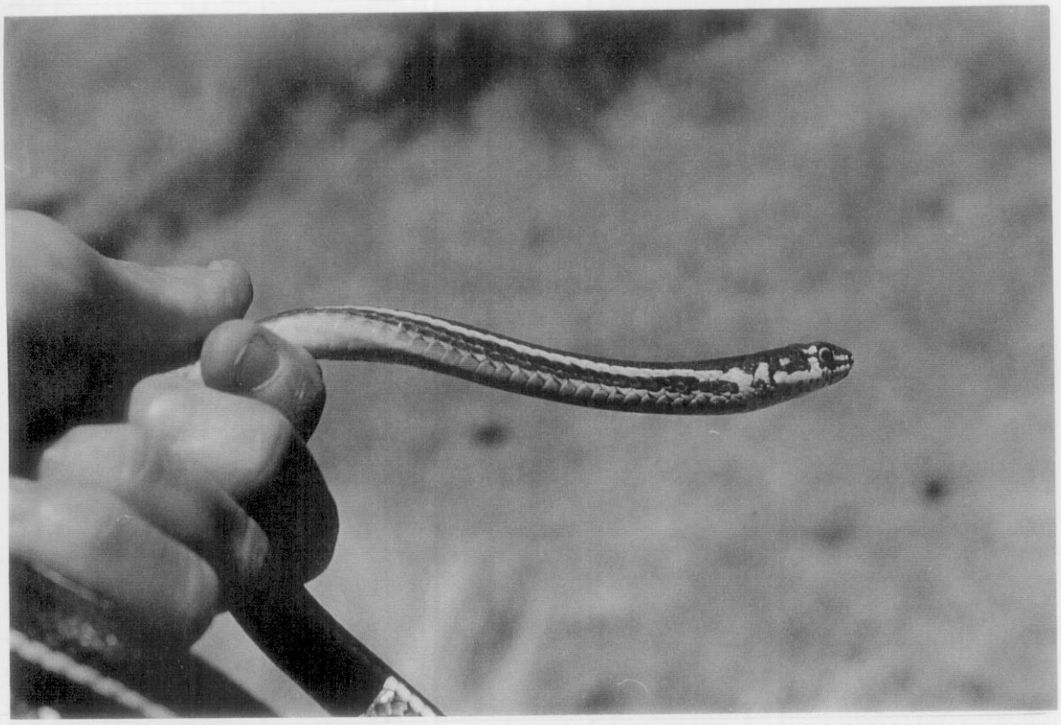

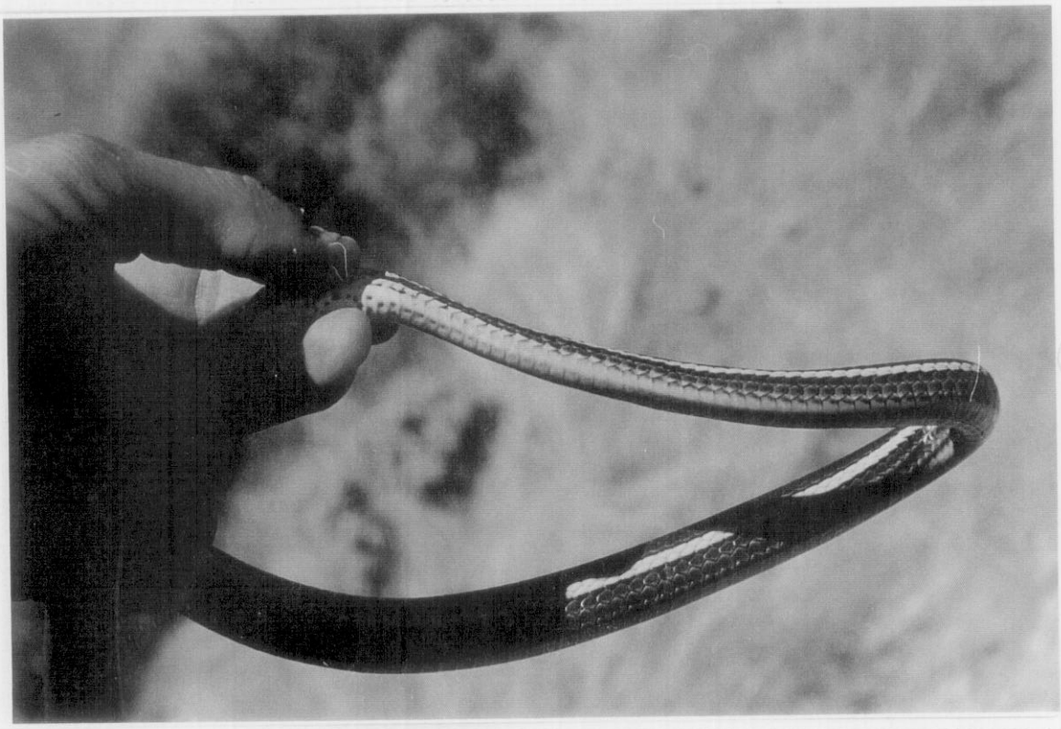

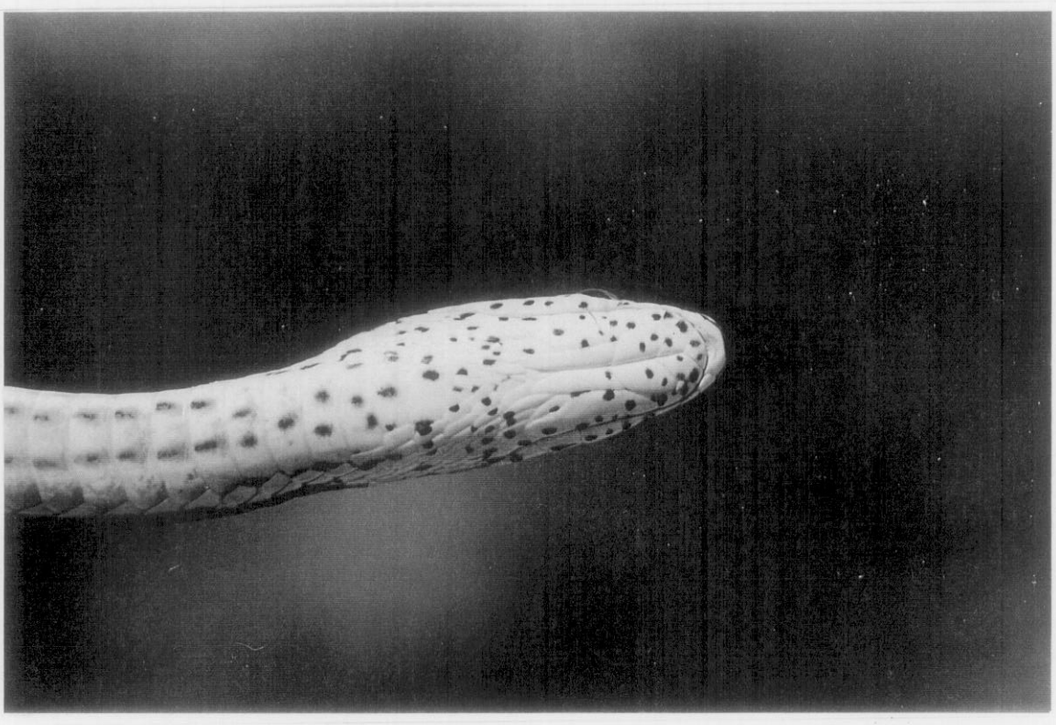

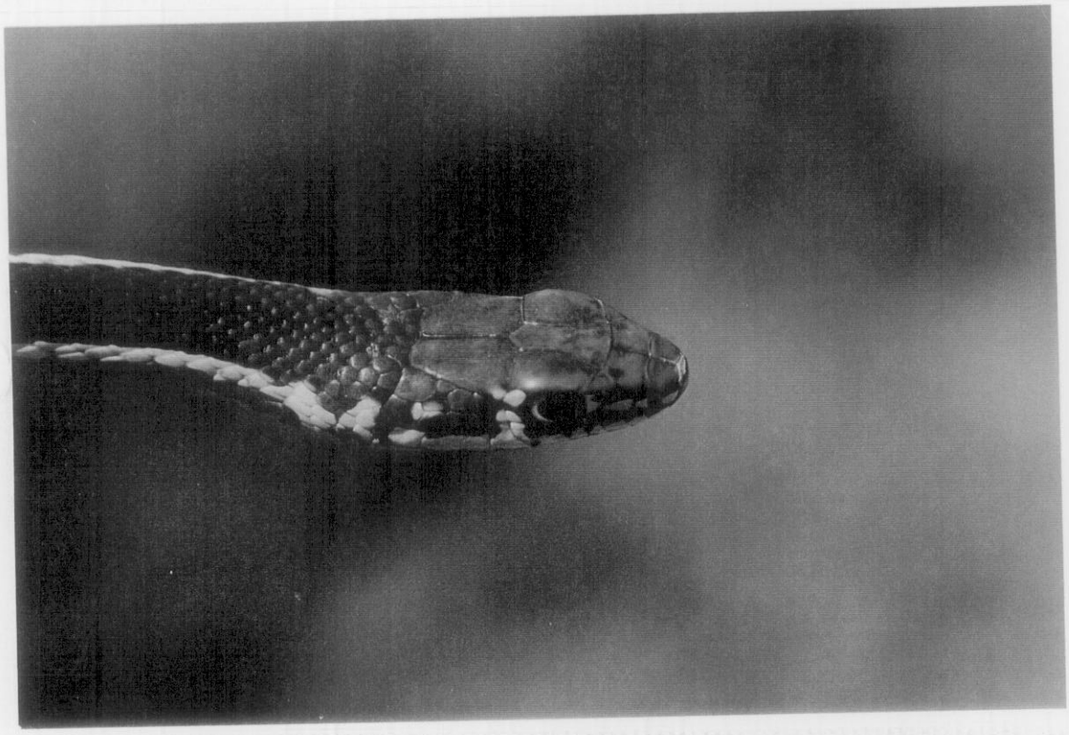

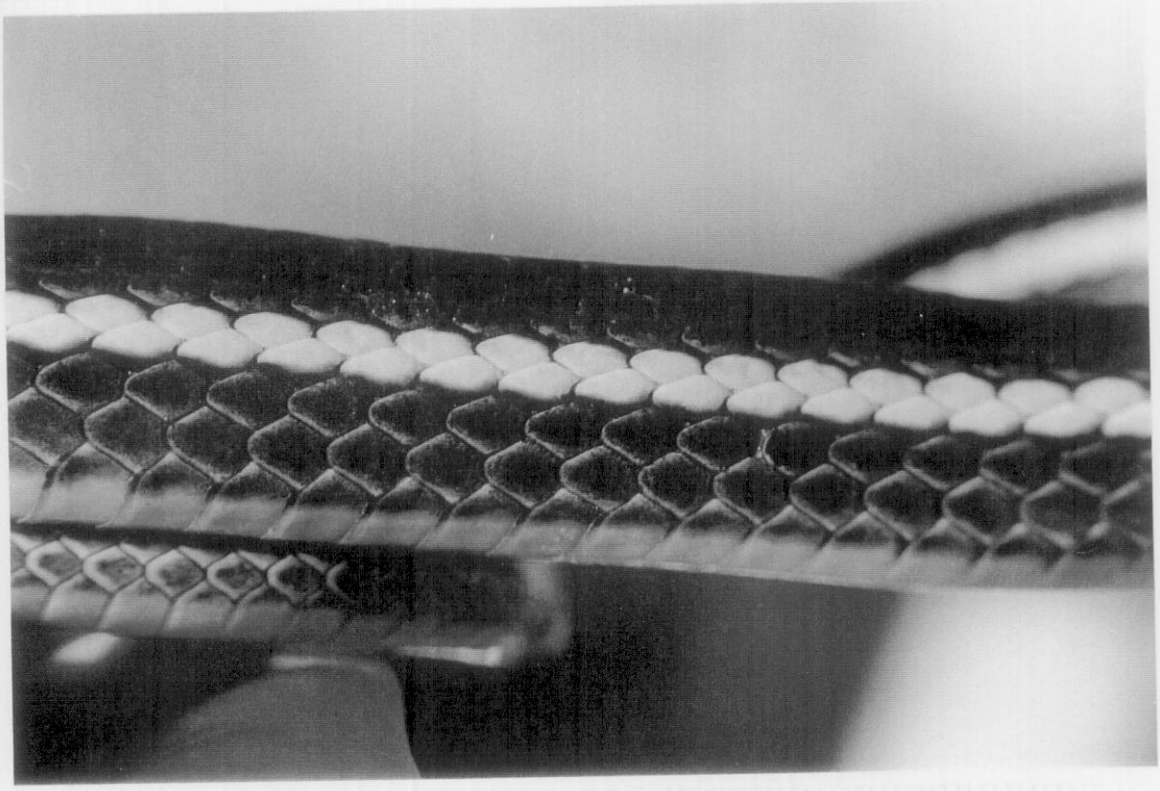

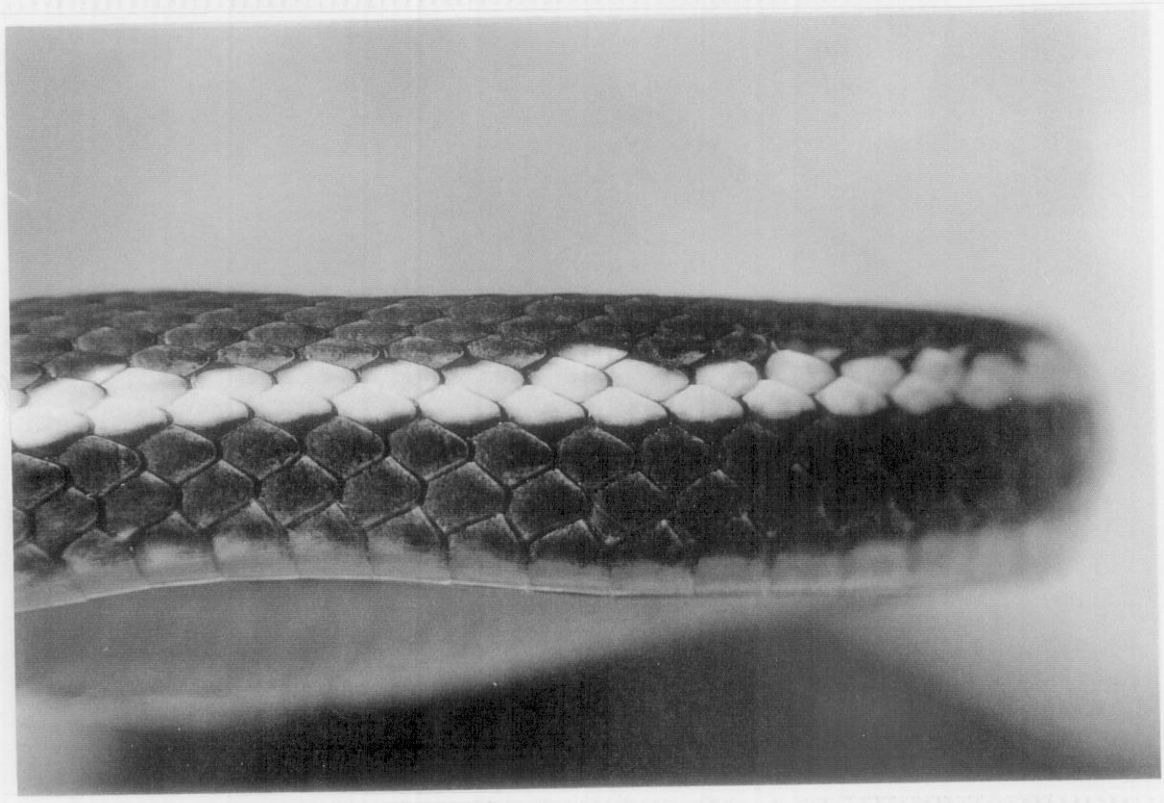

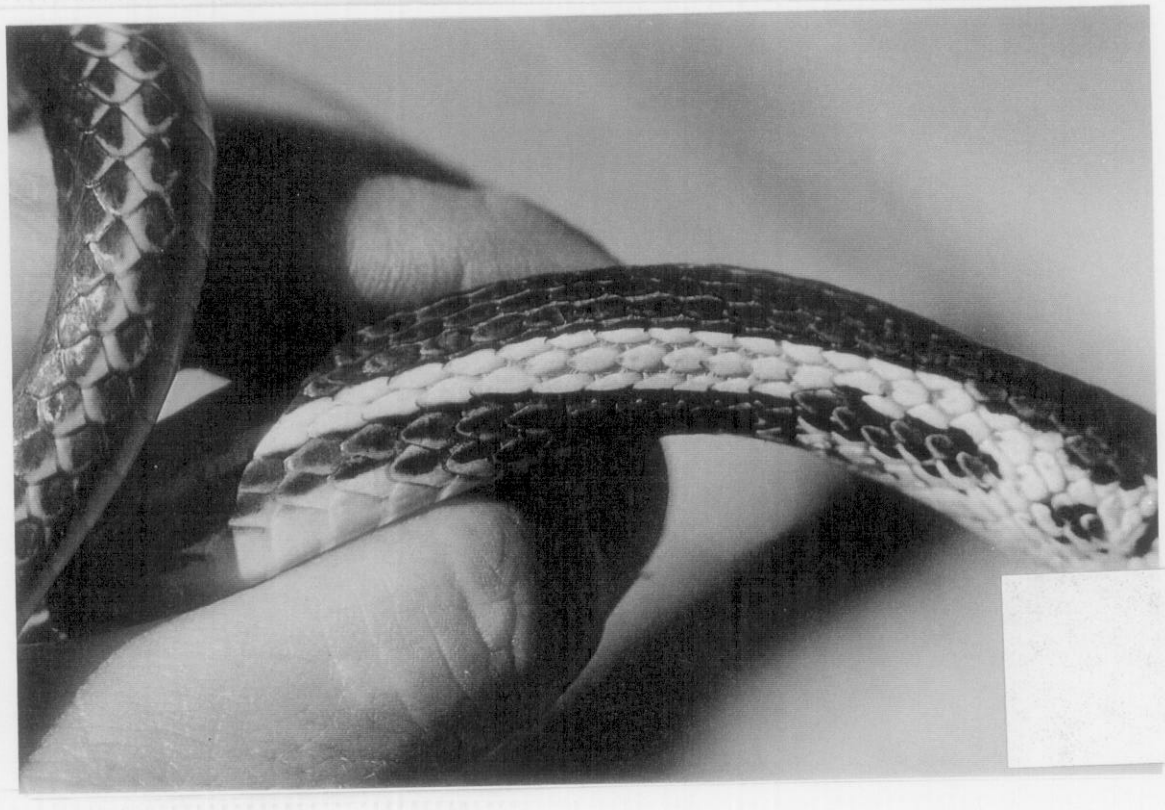

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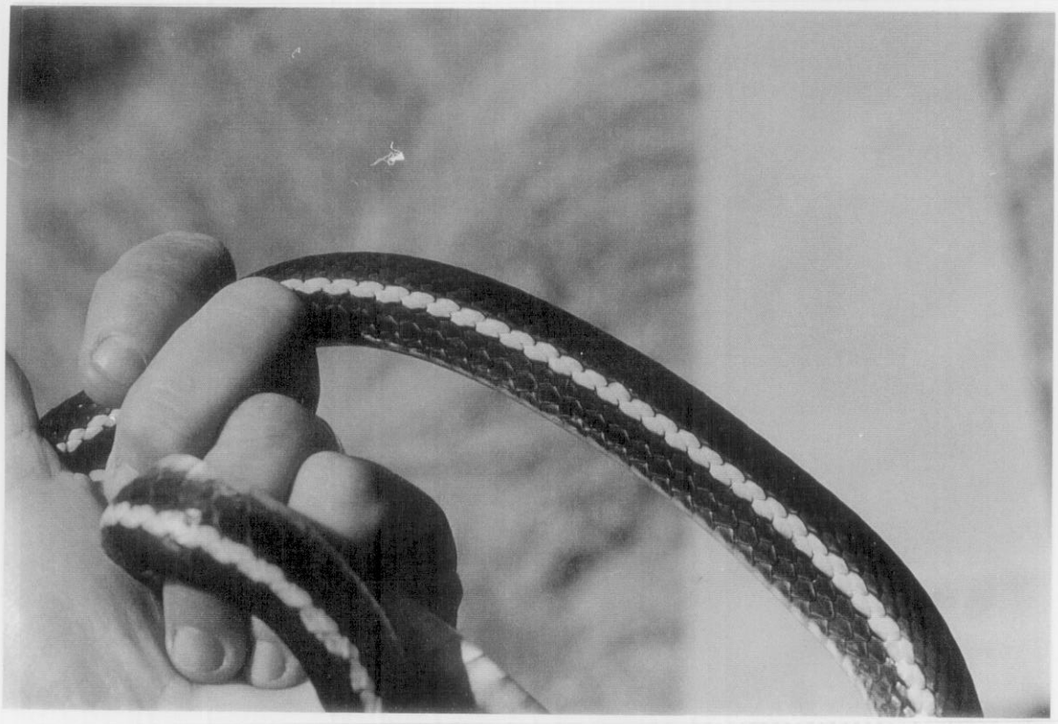
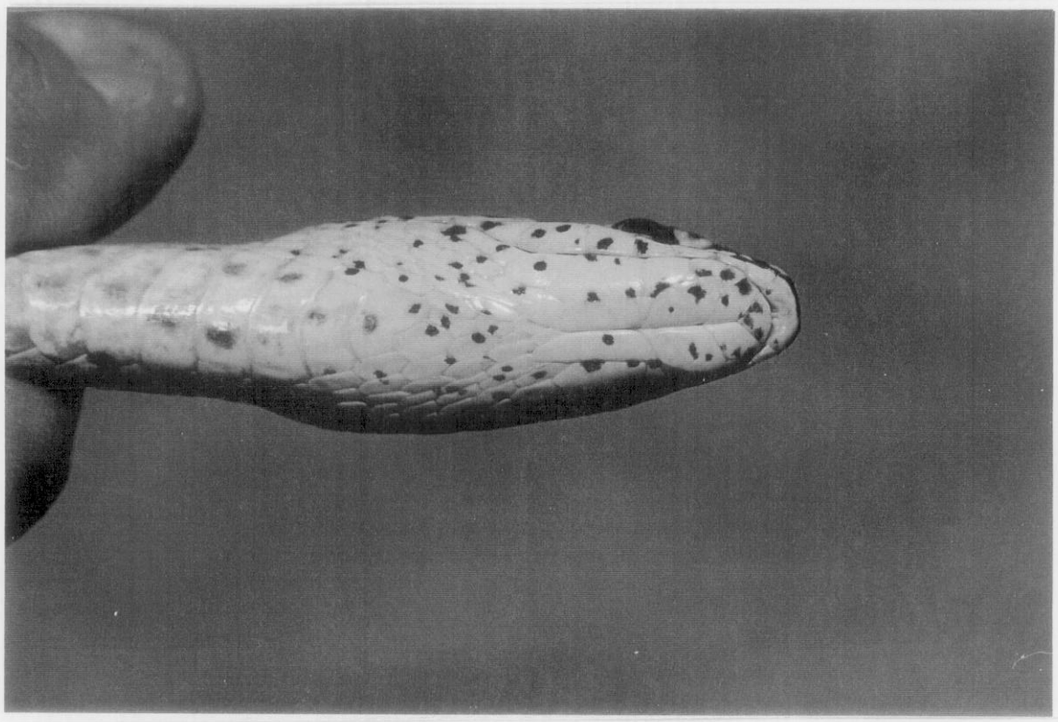
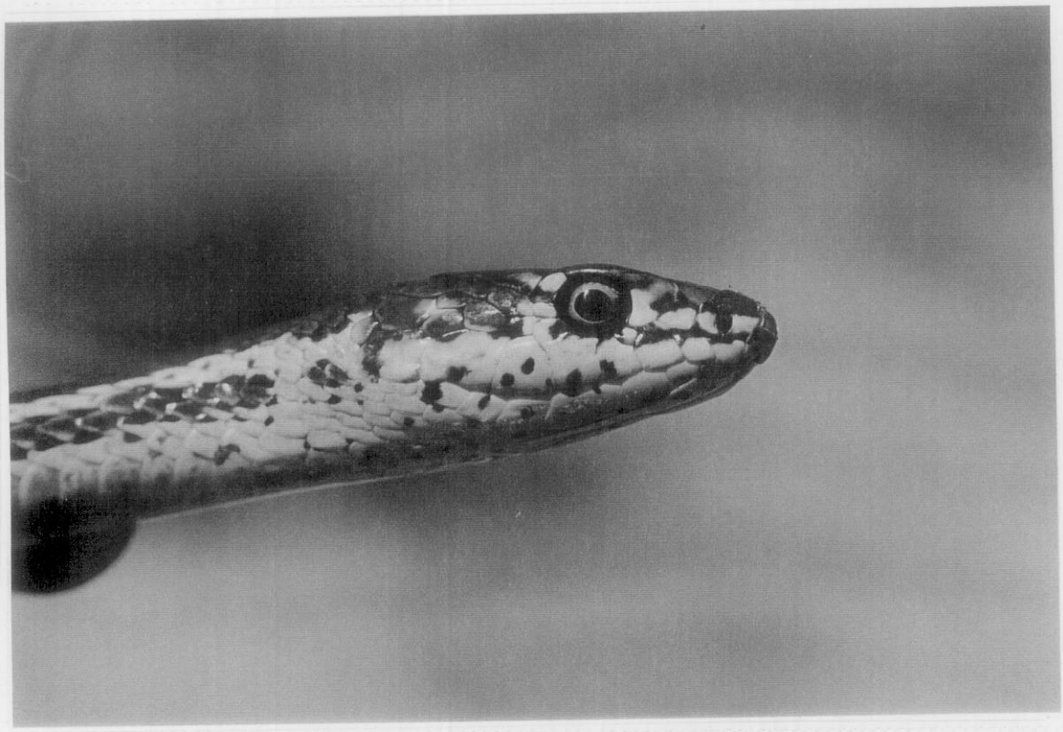
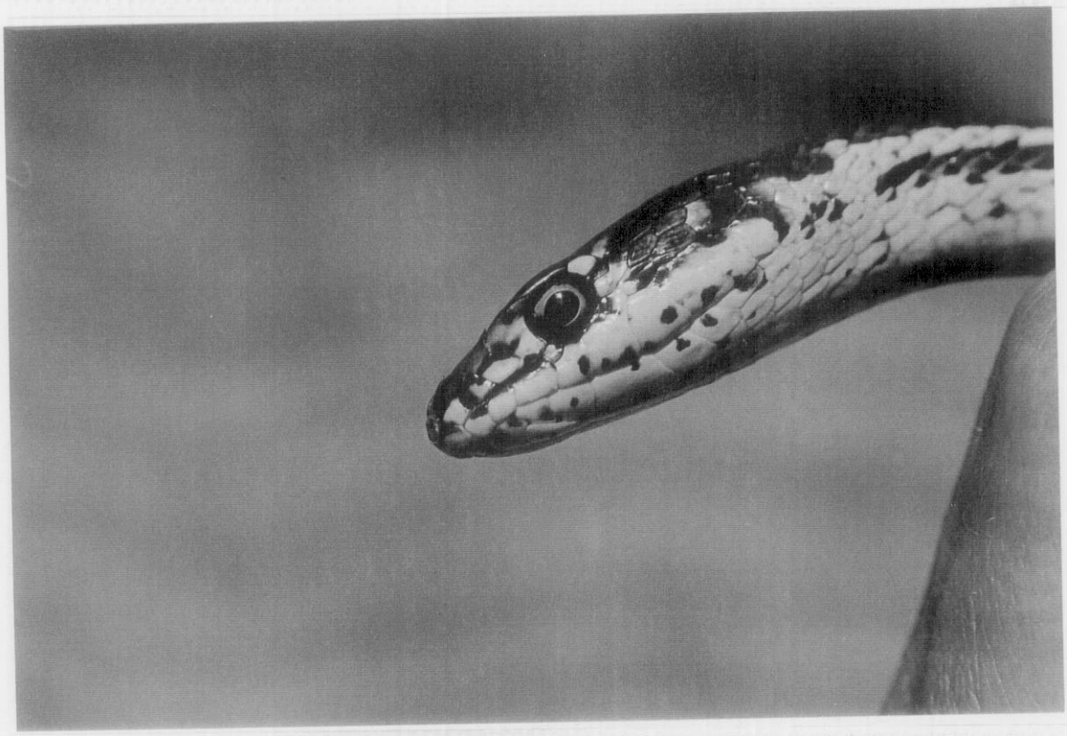
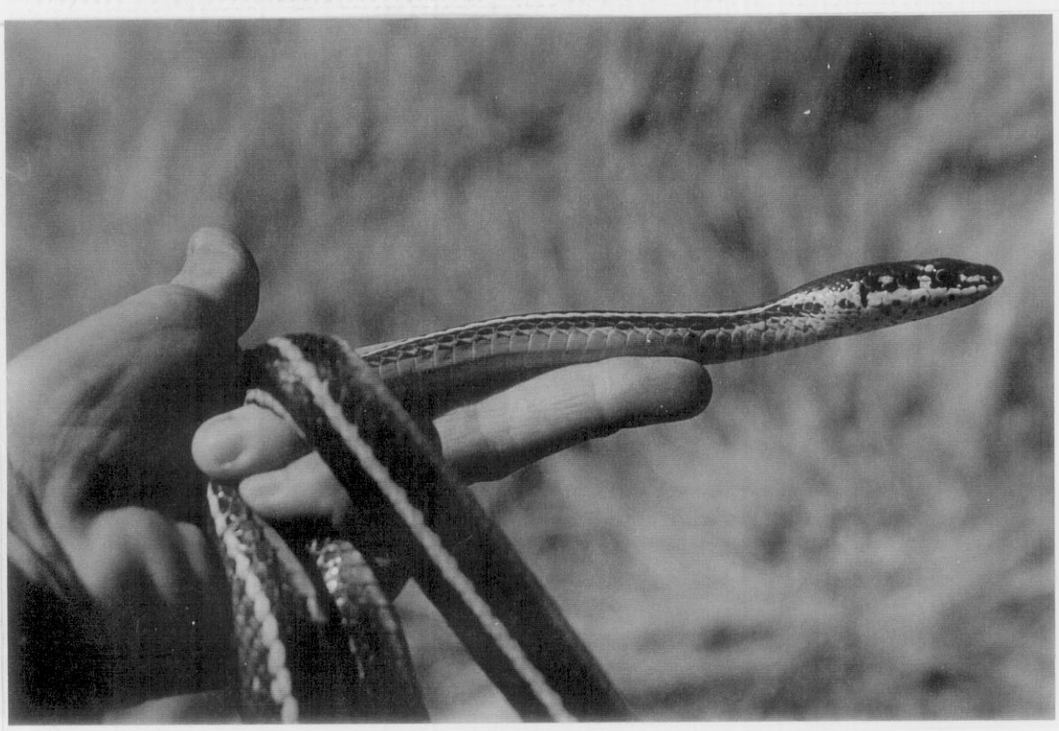


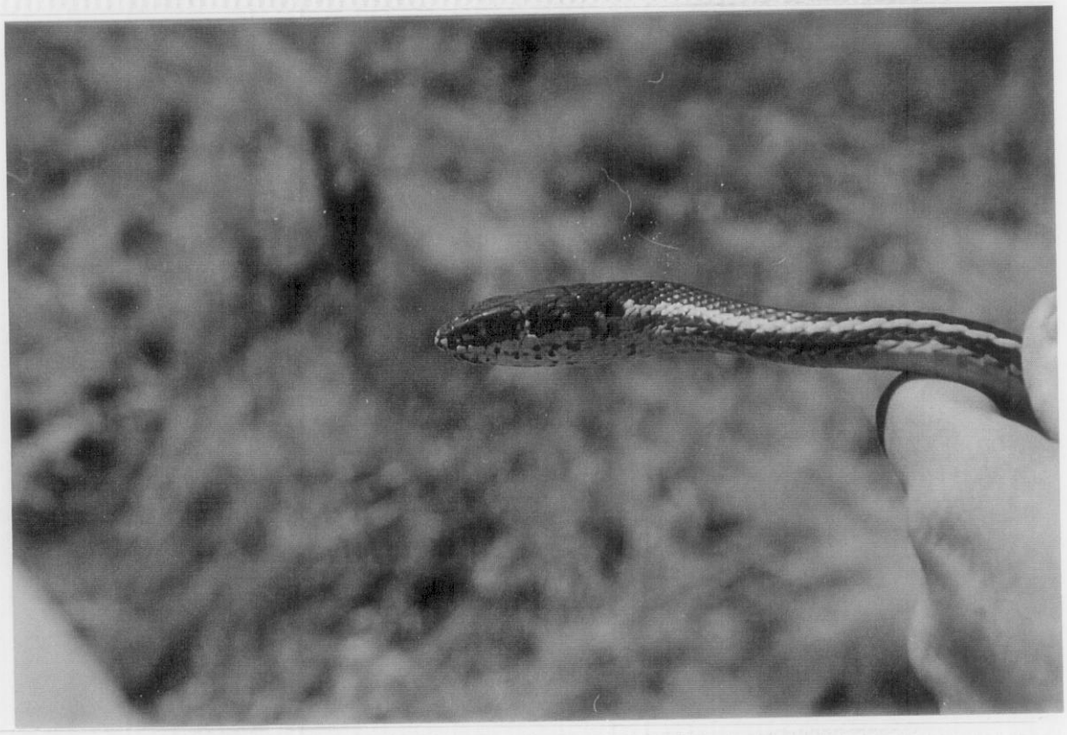


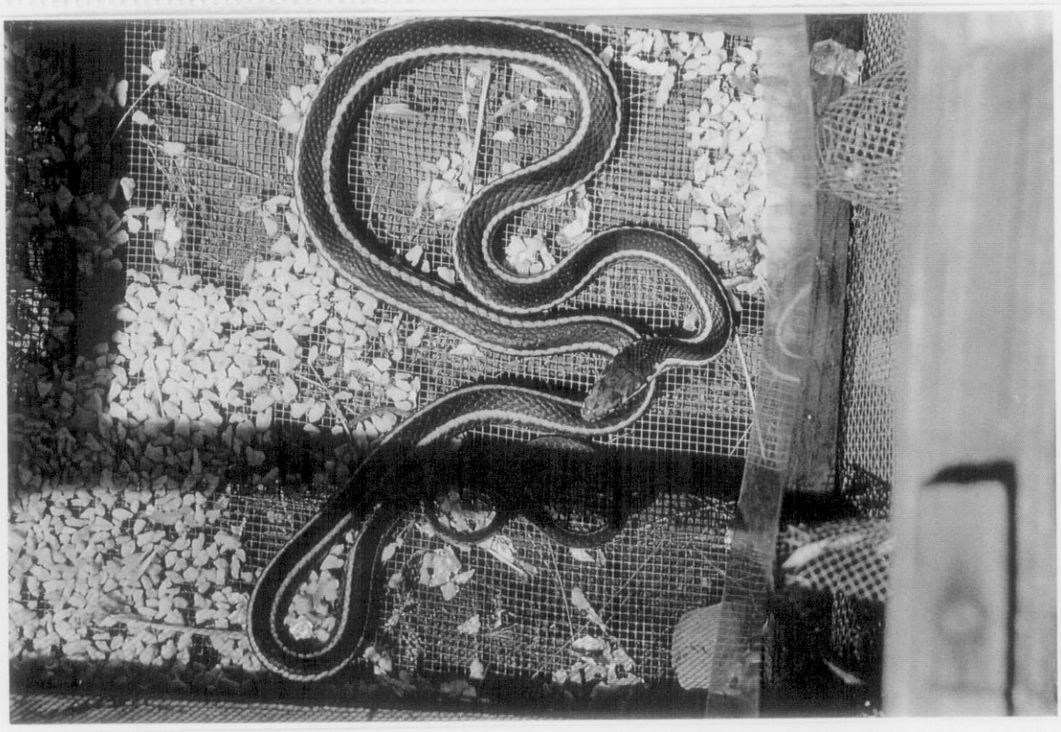
RBR9

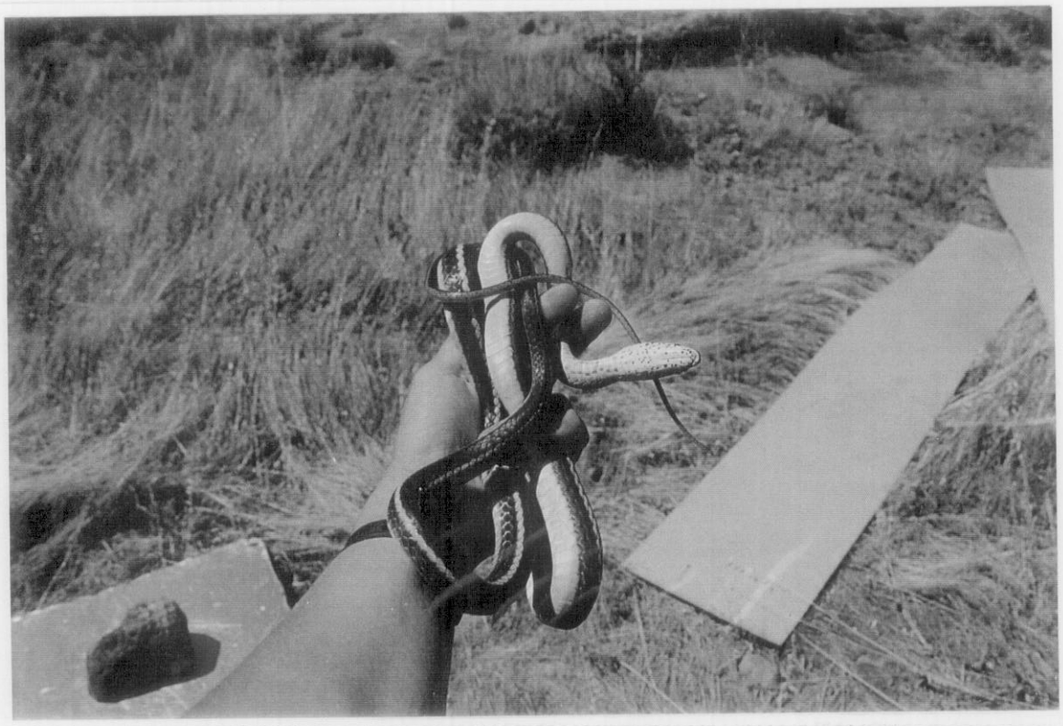


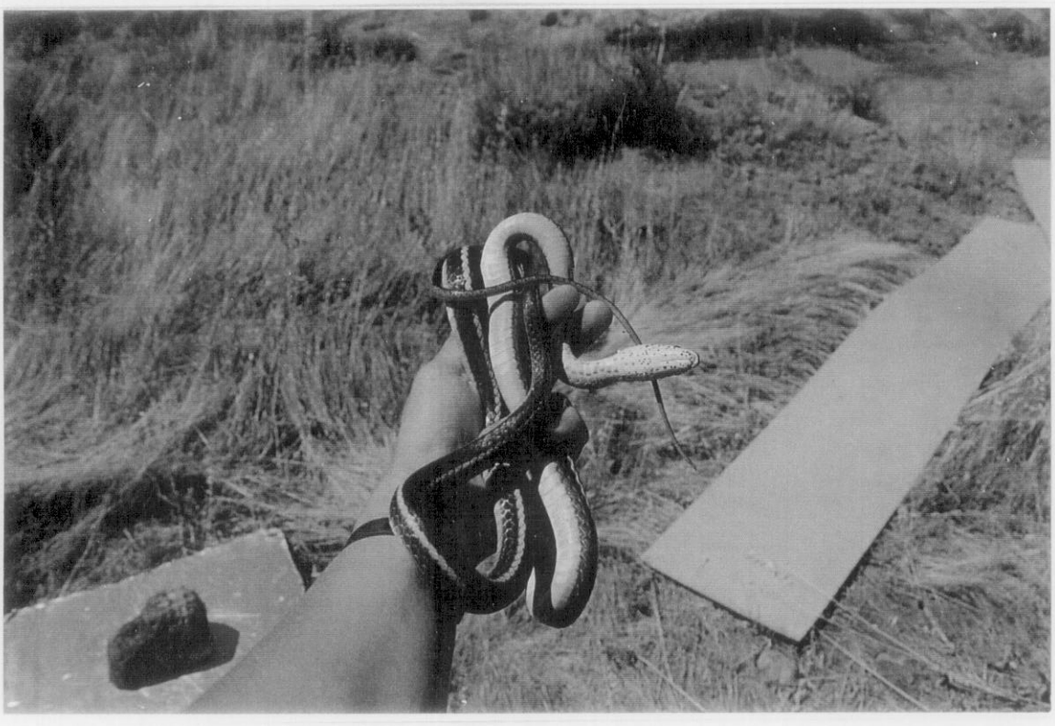


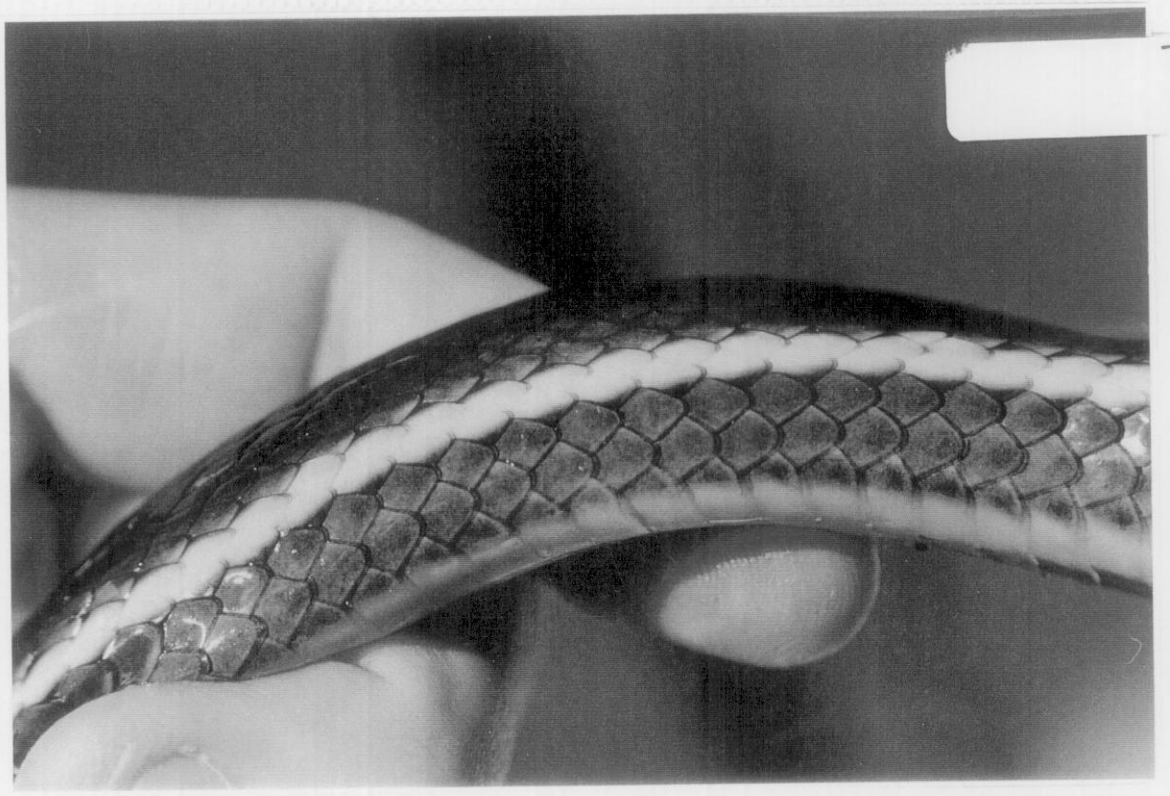








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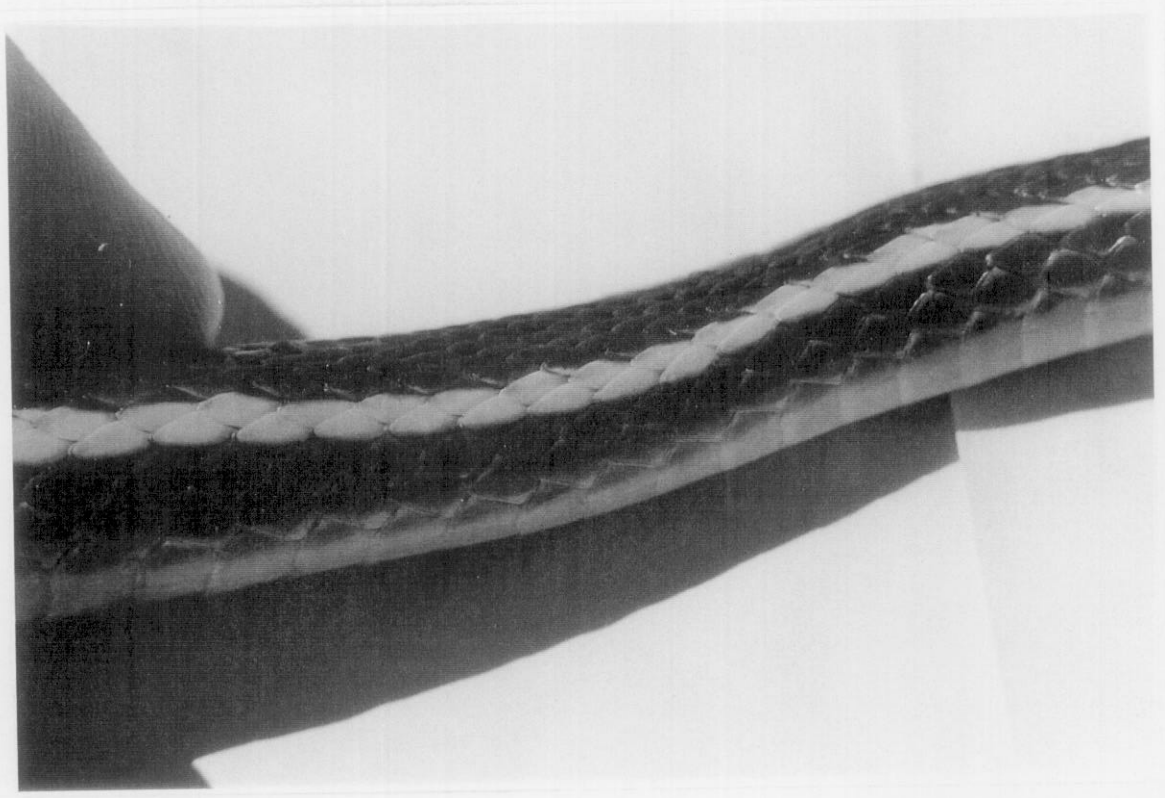

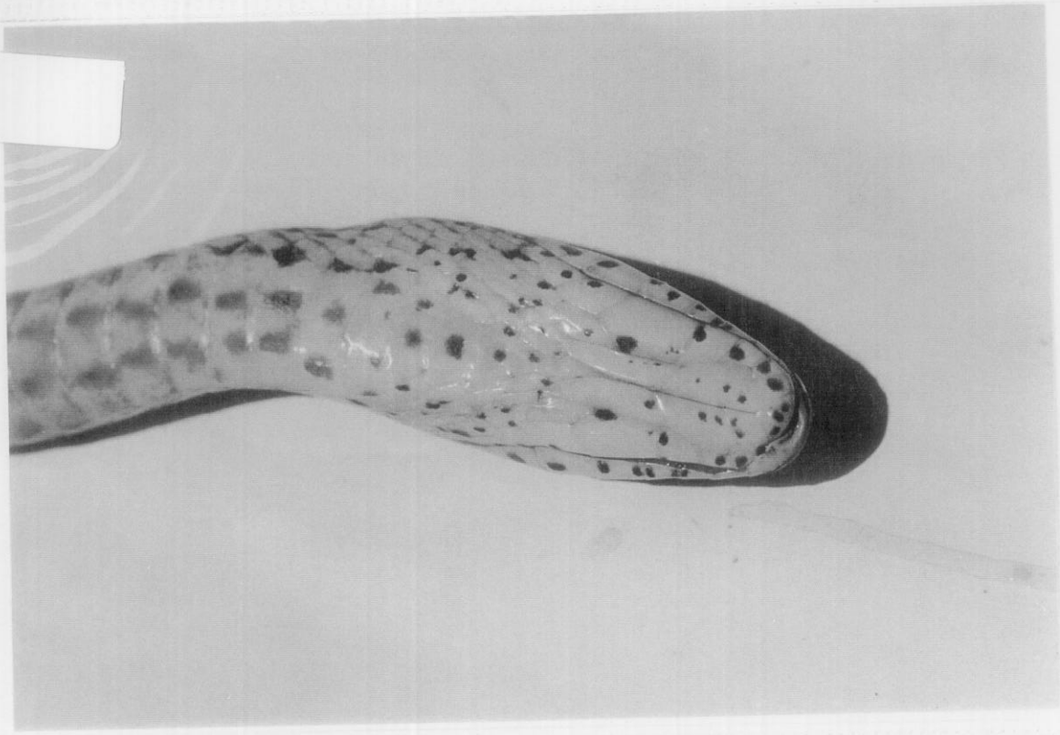

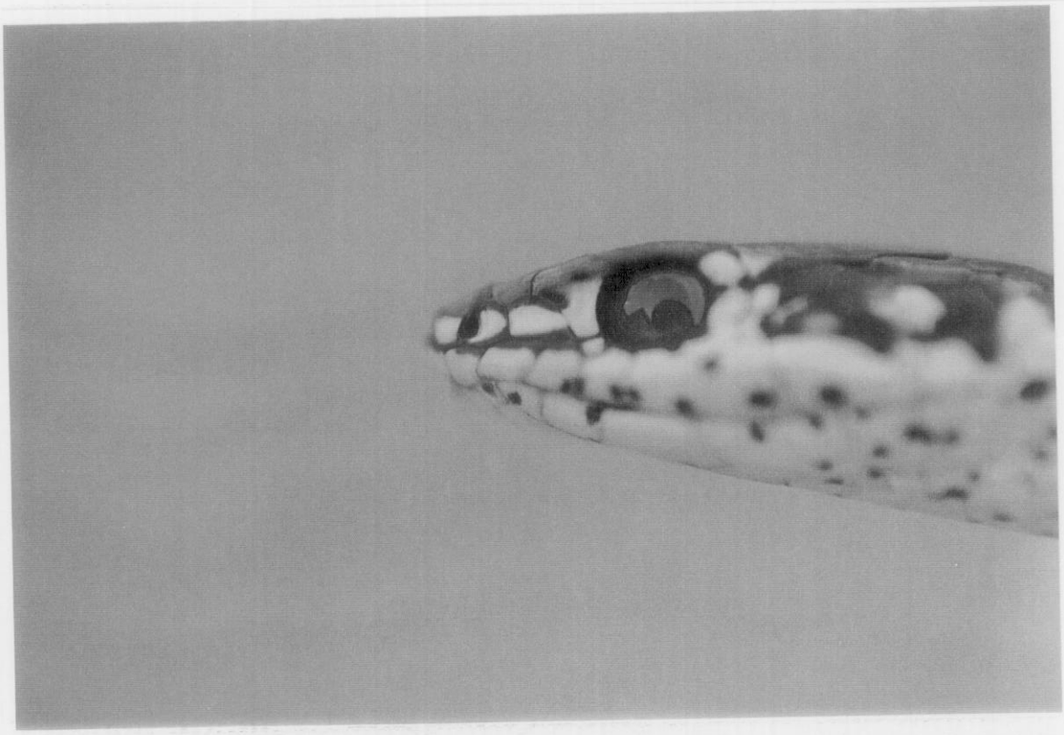

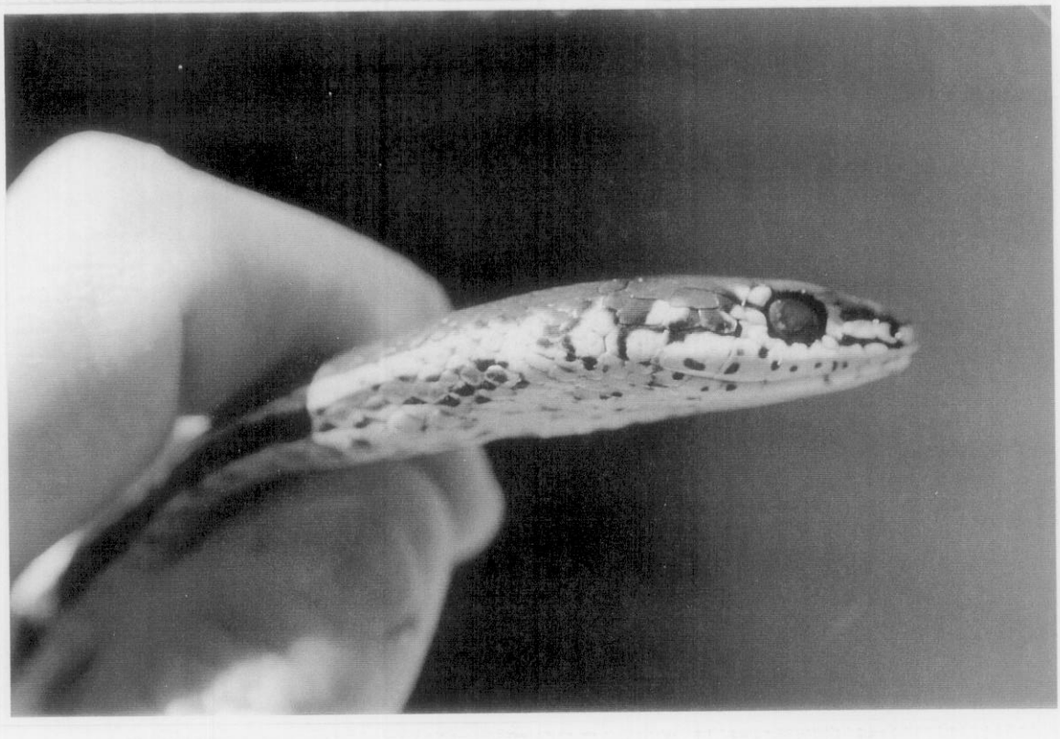

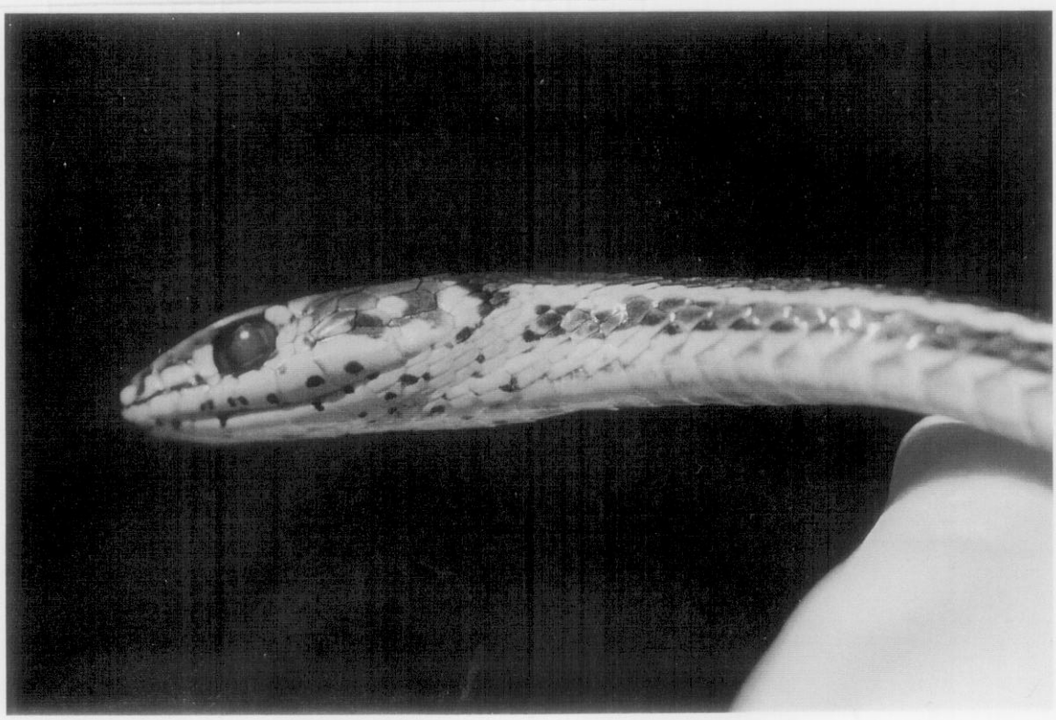

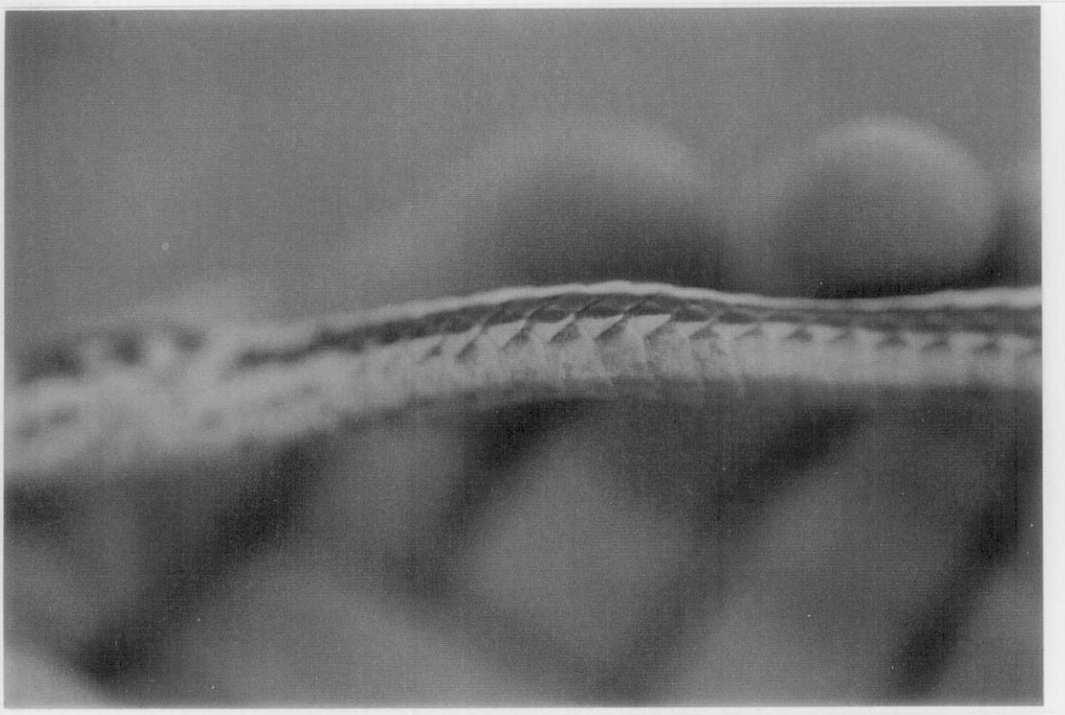

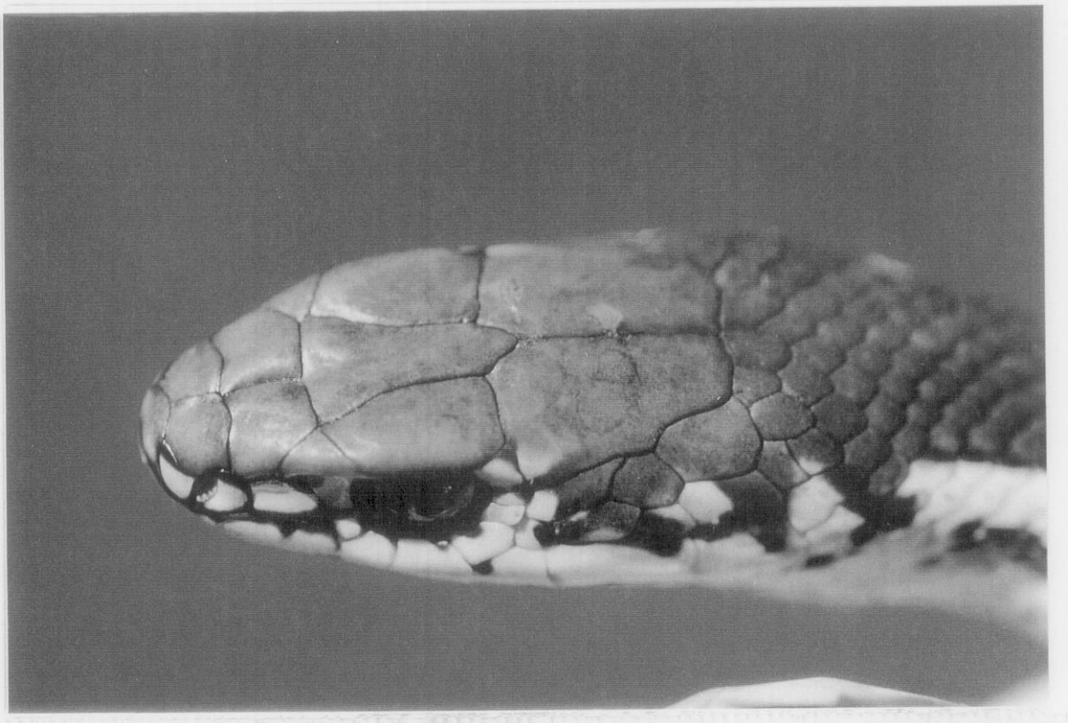

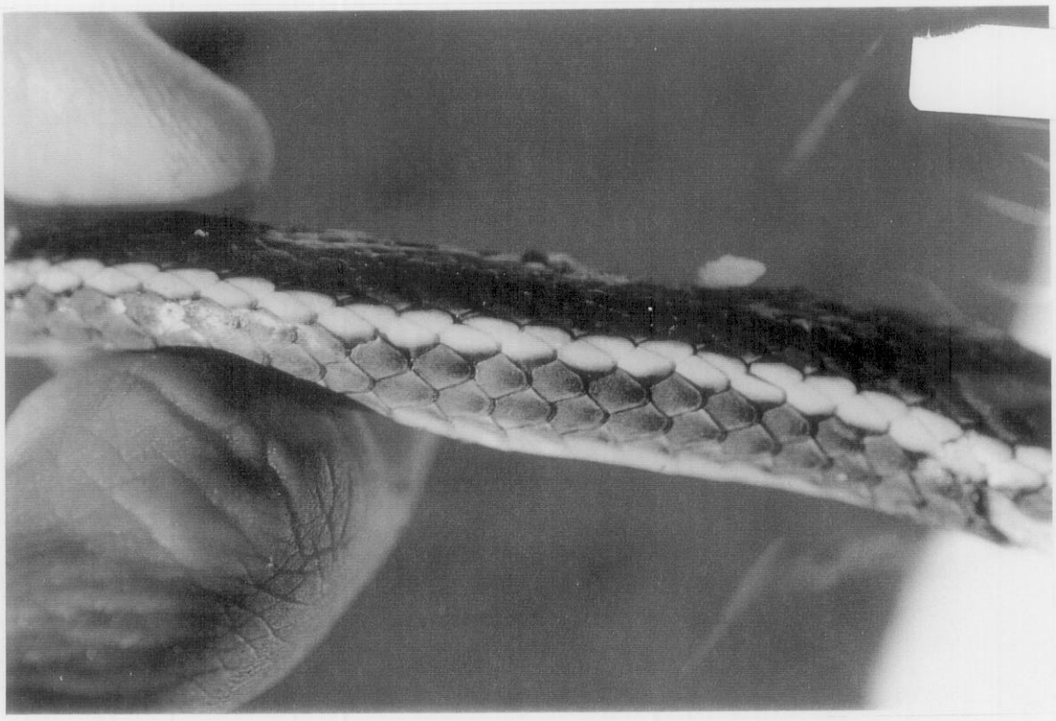

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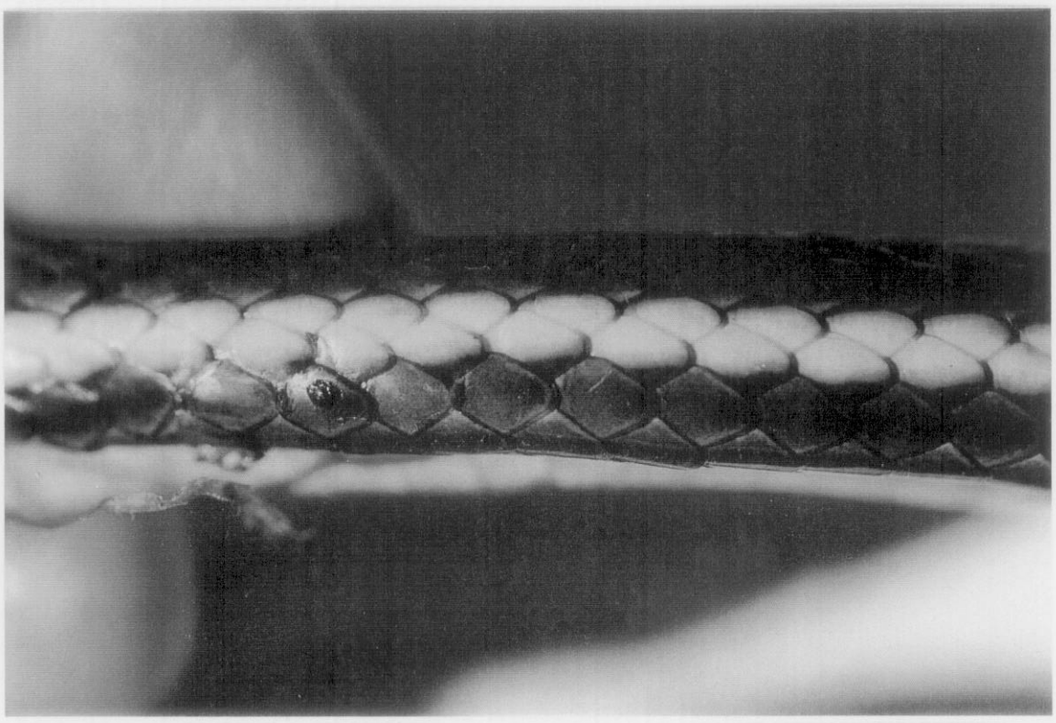

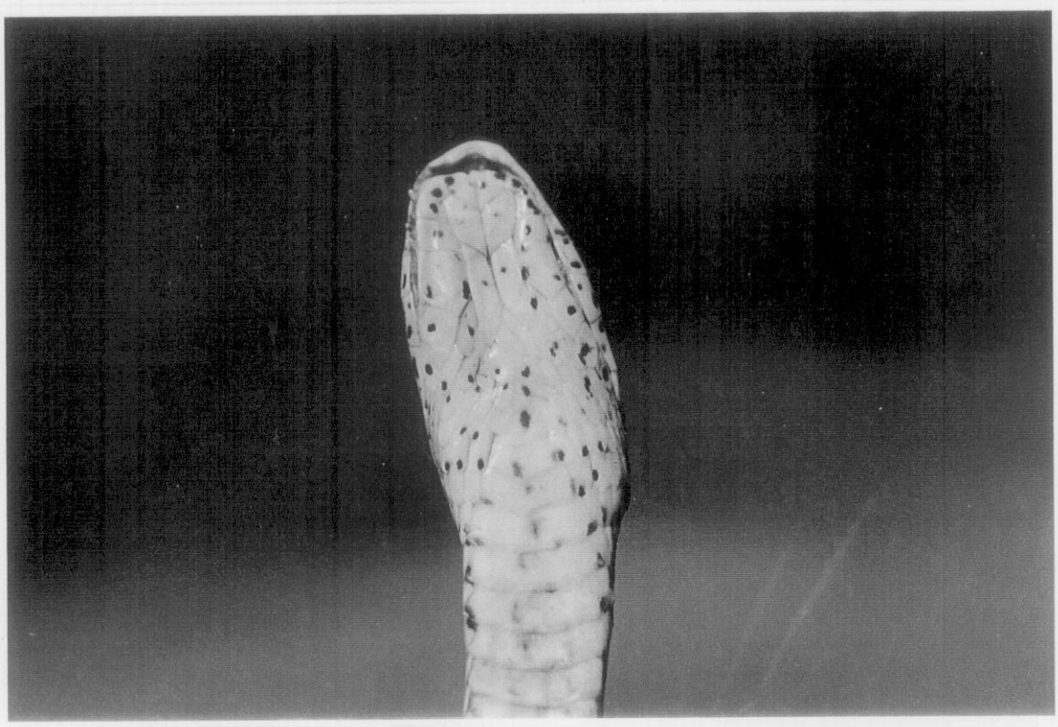

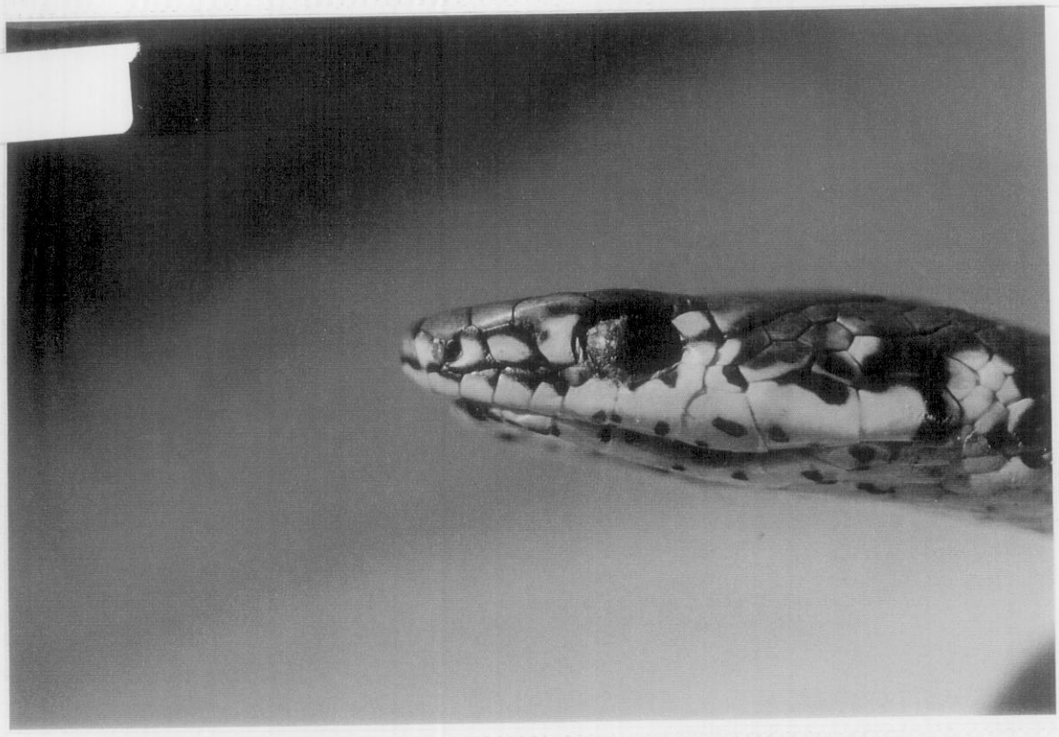

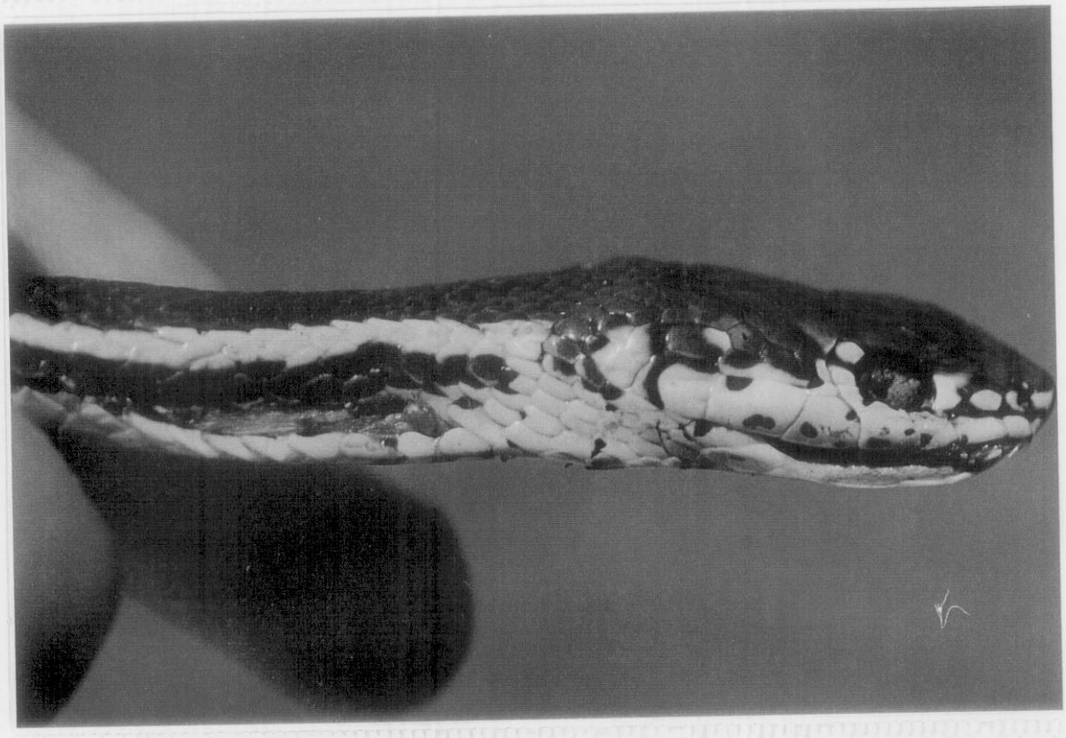

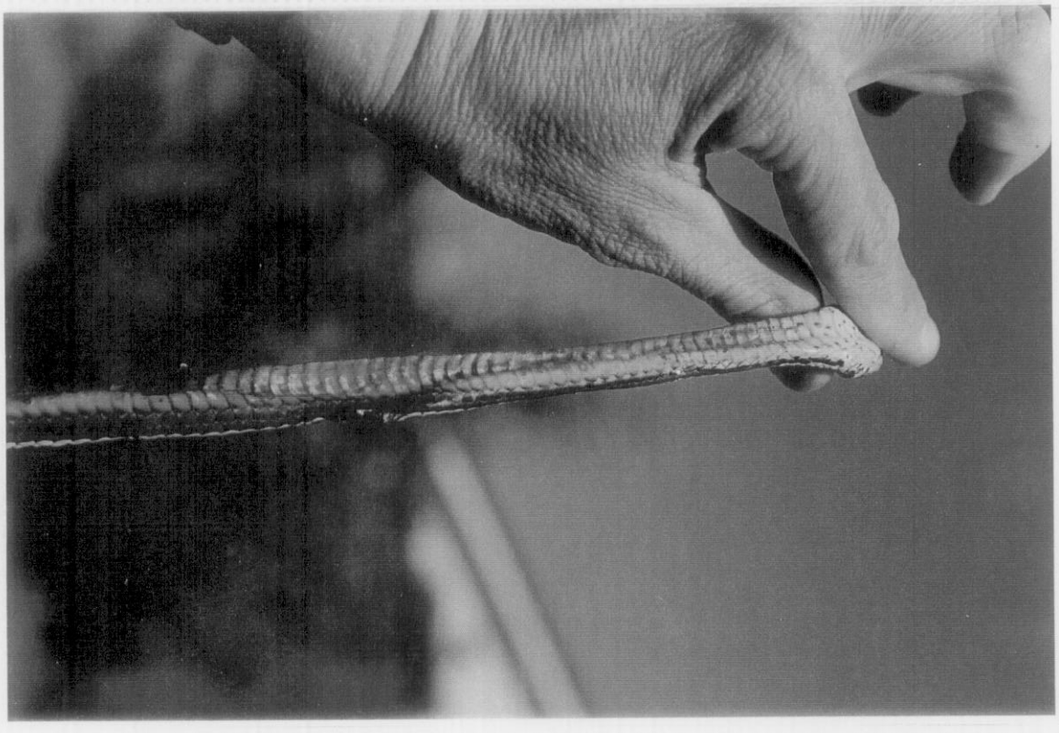

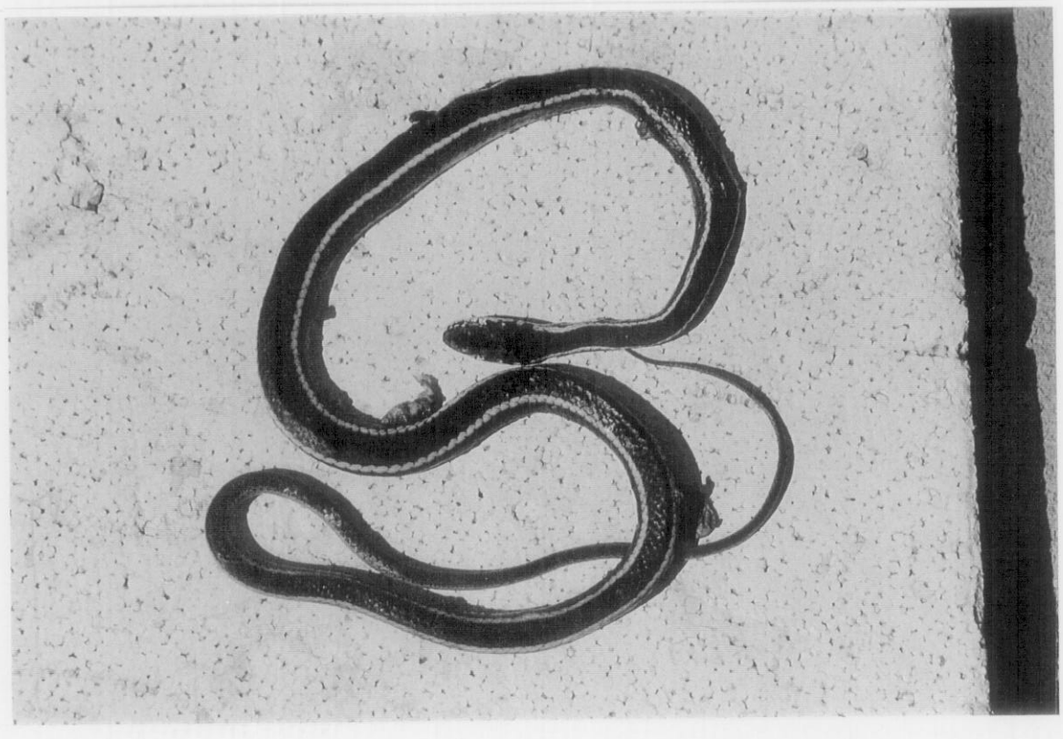

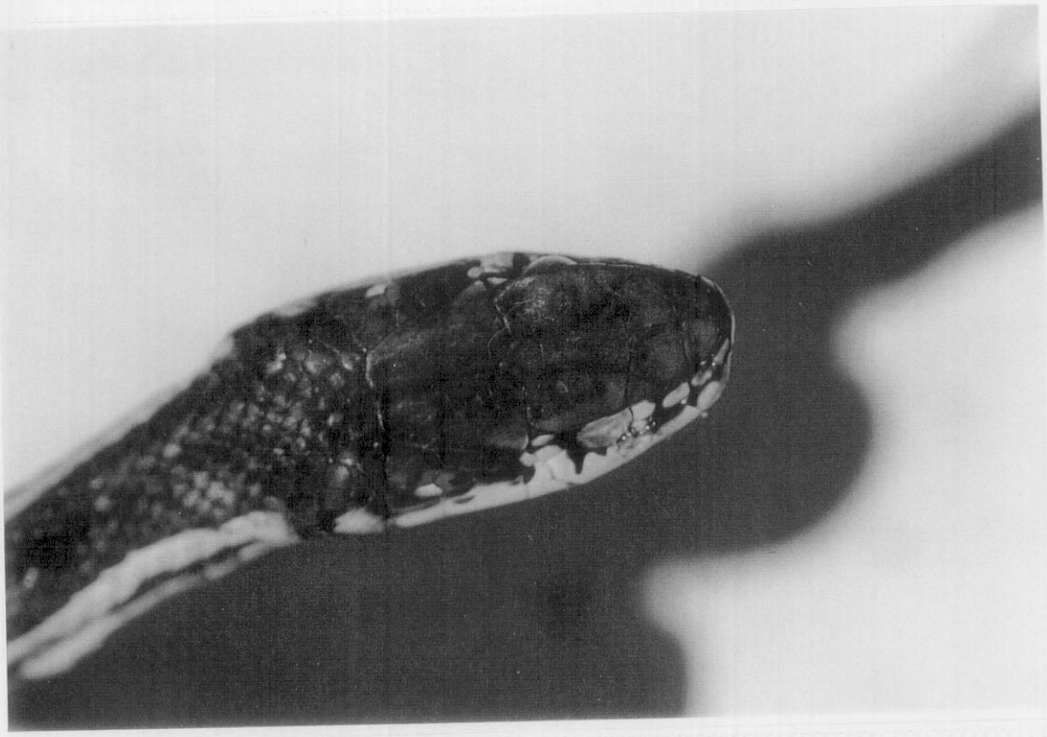

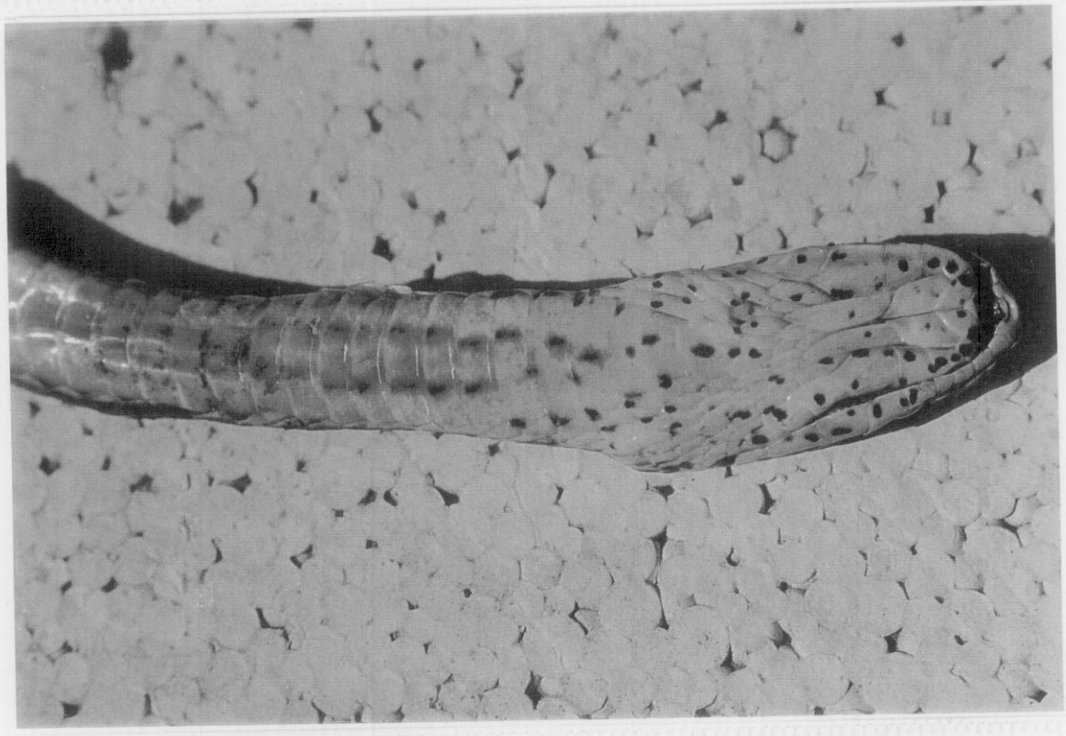

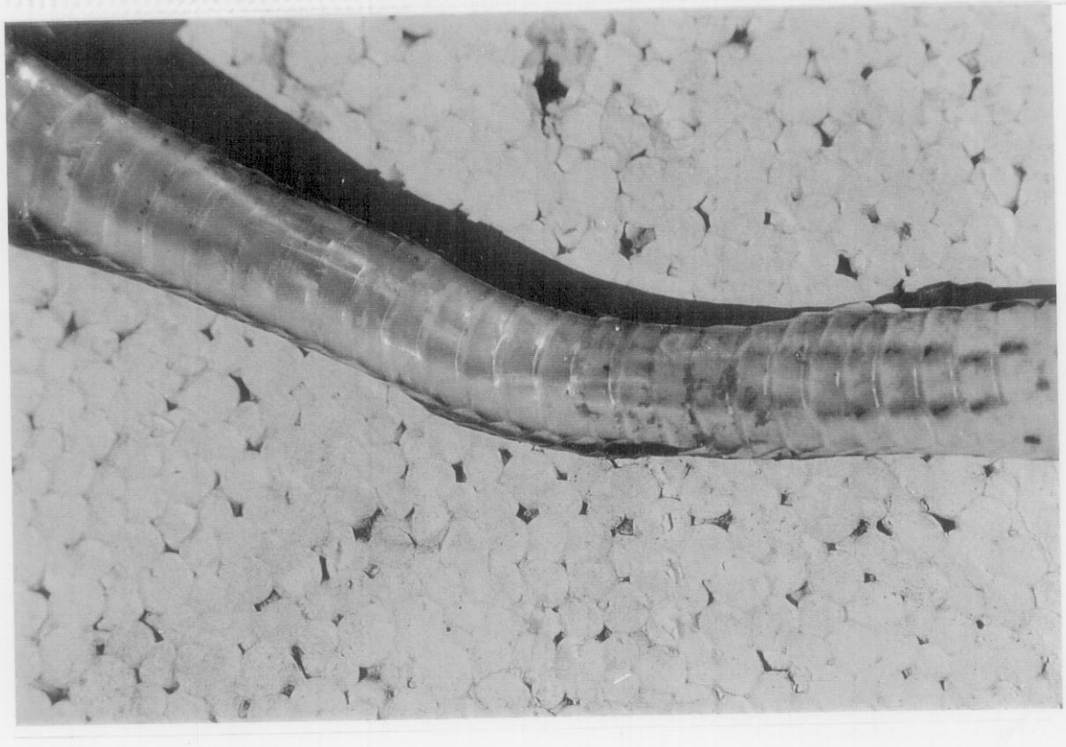

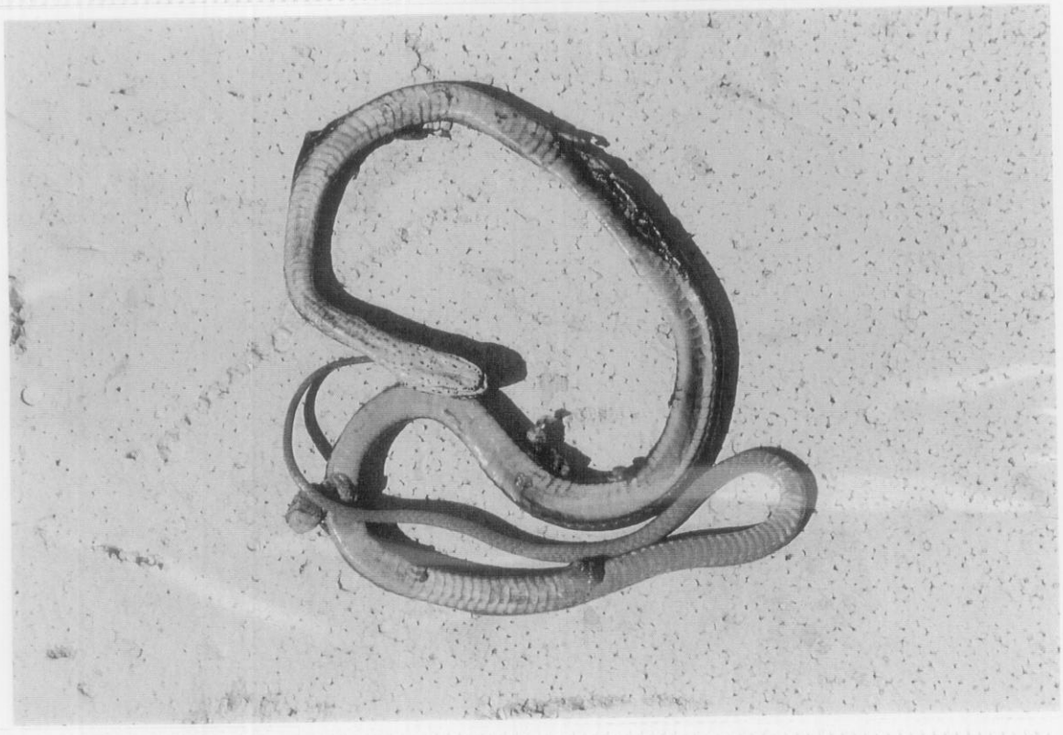

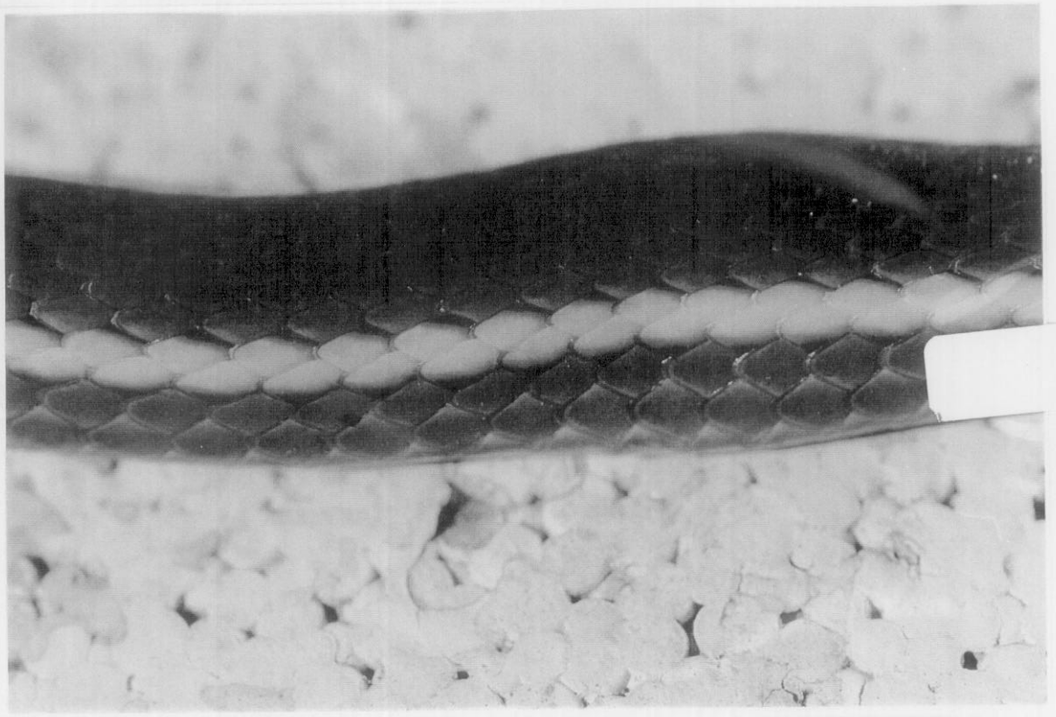

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